

Identification of Signatures of Tissue-Specific Gene Expression in *Bos Taurus*

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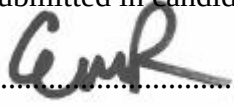


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Declaration

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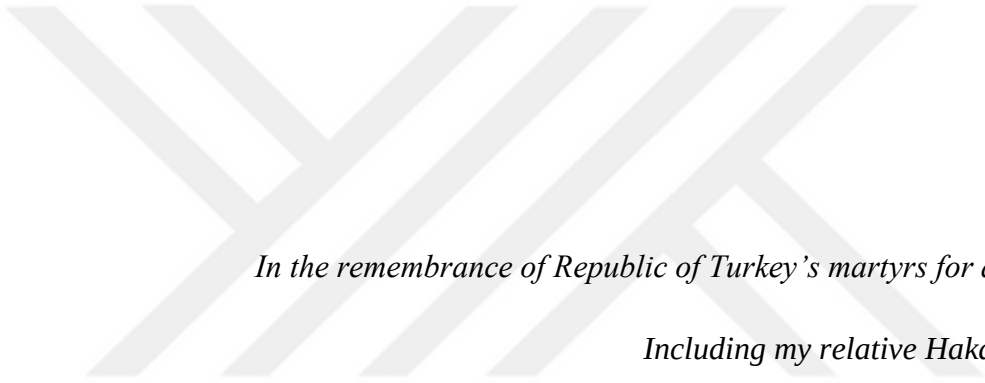
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In the remembrance of Republic of Turkey's martyrs for democracy,

Including my relative Hakan UNVER.

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Identification of Signatures of Tissue-Specific Gene Expression in *Bos Taurus*

Necati ESENER

Abstract

Large amounts of transcriptomic information from many bovine tissues have been produced thanks to recent improvements in ‘omic’ sciences. Despite this, few multi-tissue studies have been conducted and as a result, the similarities and differences between tissues that may be economically and functionally vital still remain poorly understood.

This study aimed to address this, by identifying genes that could be targeted in genomic selection studies for increases of performance related to five bovine tissues such as adipose, brain, endometrium, liver and muscle. The Galaxy software platform was used to carry out analyses, which included quality control, alignments and quantification of RNA-Seq data, which was collected from published experiments from all around the world. Statistical software *DESeq2* package was used to carry out statistical analysis of differentially expressed genes across tissue samples and tissue-specific gene expression was identified.

We found that the brain was contained the largest numbers of tissue-specific genes (2278 unique genes), while adipose had the least (344 unique genes) among five tissues analysed. In this study, particular attention was given to the genes that showed the greatest tissue-specificity including *CDC42*, *NEFL*, *SELE*, *TOP2A* and *ACTB*. Additionally, single nucleotide polymorphism (SNP) of genes that have been used as biomarkers, such as *PRL*, *ABCG2*, *TG*, *STAT5A*, *MC4R*, and *CAST* were identified. Overall, identification of tissue-specific genes, unique molecular functions and biological processes of these genes revealed distinctive transcriptomic profiles of these five tissues. We propose that genomic selection based on known SNPs from these identified genes may useful for incorporating into future breeding programmes to obtain desired tissue-specific phenotypes.

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LIST of ABBREVIATIONS

AKT	Serine/Threonine-Protein Kinase
BSE	Bovine Spongiform Encephalopathy
BSP	Bovine Spastic Paresis
cDNA	Complementary Deoxyribonucleic Acid
CG	Compensatory growth
ChIP	Chromatin Immunoprecipitation
CW	Carcass Weight
dbSNP	The Single Nucleotide Polymorphism Database
DEGs	Differentially Expressed Genes
	Ratio of Substitution Rates at Non-synonymous and Synonymous
dN/dS	Sites
DNA	Deoxyribonucleic Acid
E2	Estradiol-17 β
EBI	European Bioinformatics Institute
ERK	Extracellular Signal-Regulated Kinases
EU	European Union
FAO	Food and Agriculture Organization
GEO	Gene Expression Omnibus
GTP	Guanosine Triphosphate
I/R	Ischemia/Reperfusion
IMF	Intramuscular Fat
KPH	Kidney, Pelvic and Heart Fat
MAS	Marker-Assisted Selection
MDS	Multidimensional Scaling
mg	Milligram
miRNAs	MicroRNA
MLD	<i>Musculus Longissimus Dorsi</i>
mRNA	Messenger RNA
n-3 PUFA	n-3 Polyunsaturated Fatty Acids
NCBI	National Centre for Biotechnology Information
NEB	Negative Energy Balance
NGS	Next Generation Sequencing

PANTHER	Protein Analysis THrough Evolutionary Relationships
PKC	Novel Protein Kinase C
PUFA	Polyunsaturated Fatty Acids
RNA	Ribonucleic Acid
SMID	Single-Instruction Multiple-Data
SNEB	Severe Negative Energy Balance
SNP	Single Nucleotide Polymorphism
SOLID	Sequencing by Oligonucleotide Ligation and Detection
SRA	Sequence Read Archive
TBA	Trenbolone Acetate
TPCT	Taste Panel Connective Tissue
UMD	The University of Maryland
UniProt	Universal Protein Resource
US	United States
UTR	Untranslated Region
β-Actin	Beta Actin

1. INTRODUCTION

The rapidly increasing world population is forcing livestock producers to improve the efficiency of their animals (Golden *et al.*, 2009). Since the domestication of cattle, bovines have proved to be one of the most important animals in the livestock species, as its beef and milk are important sources of human's nutrition (Taberlet *et al.*, 2011). According to recent statistics concerning meat production, 68.1 million tonnes of beef was produced which accounts for the 23% of the meat consumption of the world (FAO, 2014). Furthermore, data from the FAO indicates that worldwide bovine milk production in 2013 was 636 million tonnes (FAO, 2013).

There are, world-wide, more than 800 cattle breeds from two subspecies: *Bos taurus* and *Bos indicus*. *Bos indicus* is a hot climate-adapted subspecies of cattle of South-Asian origin, which have prominent humps forward of the shoulder (Loftus *et al.*, 1994). *Bos taurus* is a cooler climate-adapted subspecies of cattle of western Asian origin, which are all humpless (Troy *et al.*, 2001).

Recent revolutionary improvements in '-omic' sciences have fuelled a rapidly expanding field for life science researchers. The bovine genome project was a result of this new field with contributors from all around the world, was completed in 2009 (Elsik *et al.*, 2009). Later in that year, Liu *et al.* (2009) managed to publish the first assembly of the bovine, named Btau 4.0. The second assembly of the bovine genome was released at the University of Maryland (Zimin *et al.*, 2009), named UMD 3.1. It is now known that bovine genome contains more than 22,000 genes on 31 chromosomes (29 autosomes and two sex chromosomes) (Elsik *et al.*, 2009). Despite this, essential genes in tissues, which involve in crucial metabolic processes and have economic importance, are relatively little known. The similarities and differences between tissues can be identified by understanding their tissue-specific genes expression.

Hence, this study aims to detect differentially expressed genes in mRNA sequences from five different tissues such as brain, endometrium, and liver that regulate crucial functions in the animal body; muscle and adipose that directly concern preferences of consumers. The tissue-specific genes will be selected due to their protein-protein interaction counts and obvious functions in their tissue. They will then be analyzed for the presence of SNPs, which may represent targets for future genome-wide selection studies.

2. LITERATURE REVIEW

2.1. GENE EXPRESSION

Different genes are expressed in various types of tissues, although every single tissue in the organism contains the copies of each gene of the whole genome. Organisms use the products of genes such as protein or RNA molecules instead of direct utilizing of genes, themselves (Taft *et al.*, 2010). The process of producing the required molecule is called as gene expression. However, not every gene product is synthesized any time or constant amount. Genes are expressed selectively which prevent excessive energy loss and harmful effect of products of some genes that should be only synthesised in the end of the cell life (Kirk *et al.*, 2008). It is used to be thought that genes which were not used in the tissue lose their function in time. However, gene expression is the only thing varies from tissue to tissue as all of the cells in a tissue contain same type and number of genes (Alberts *et al.*, 2009).

Each cell in various tissues is specialised to fulfil a certain duty and express certain genes. The amount and types of mRNA molecules of expressed genes in a tissue can, therefore, reflect the function of that tissue (Getzenberg, 1994). Measurement of the mRNA for every single gene that is present in a tissue sample can be used to make a “genetic catalogue” of what sorts of biological processes are executed in those tissues (Alberts *et al.*, 2009). Moreover, what makes the tissues different from each other could be learnt by comparing such gene expression profiles of various tissue types.

2.2. OMIC TECHNOLOGY

‘Omics’ is a new term to generalise some rapidly improving fields of science such as genomics which applies to the genome, transcriptomics which studies transcribed messages, proteomics which is the study of proteins and metabolomics which applies to metabolites present in a cell or organism at any time (Zhang *et al.*, 2010).

Their application consists of three main features contrary to traditional approaches. The first characteristic of ‘omic’ technologies is their high-throughput, holistic and data-driven approaches. The second distinctive feature is that it aims to define the cell metabolism as one integrated system instead of sole sets of various parts which use the relationship of many measured molecular species, and the third feature is that a large amount of data is generated by it, and their analysis need significant statistical and computational work (Park *et al.*, 2005a).

2.2.1. Genomics

The entire DNA content which is present in a cell of an organism is named as the genome. Genomics originally used to be defined as the systematic study of the whole genome (Cook-Deegan *et al.*, 2000). However, it nowadays is used to define large-scale, high-throughput molecular analysis of multiple genes, specific gene products or regions (Zhang *et al.*, 2010).

Genomics also contains the studies on both intragenomic processes (epistasis, heterosis, and pleiotropy) and the interactions between loci and alleles in the genome. The difference of genomics from molecular biology or genetics is that genomics does not concentrate on the role and function of single genes except when trying to understand the role of a single gene in the context of the entire genome (Smith *et al.*, 2005).

2.2.2. Transcriptomics

Transcriptomics is one of the approaches to measuring the whole set of all mRNA molecules, or transcripts, produced in one cell or a group of cells (Horak and Snyder, 2002). Transcriptomics is also named as global analysis of gene expression or genome-wide expression profiling. The biggest difference between transcriptomics and genome sequencing technologies is that it does not measure DNA, which holds the solid information for any living cell which is highly constant during external fluctuations. It focuses on the dynamic expression of mRNA molecules at various stages, therefore, showing the genes which are actively expressed at any given time (Gilbert *et al.*, 2008).

2.3. RNA-SEQ

RNA-Seq experiment can be briefly explained in a few steps, as shown in Figure 1. Firstly, a population of RNAs is converted to a library of cDNA fragments by adaptor attachment to single or both ends. Molecules are then sequenced in a high-throughput manner. The resulting reads are then aligned to reference genome or transcript. The aligned reads are categorized as exonic, junction and poly (A) read. Gene expression is profiled by using these three types (Wang *et al.*, 2009).

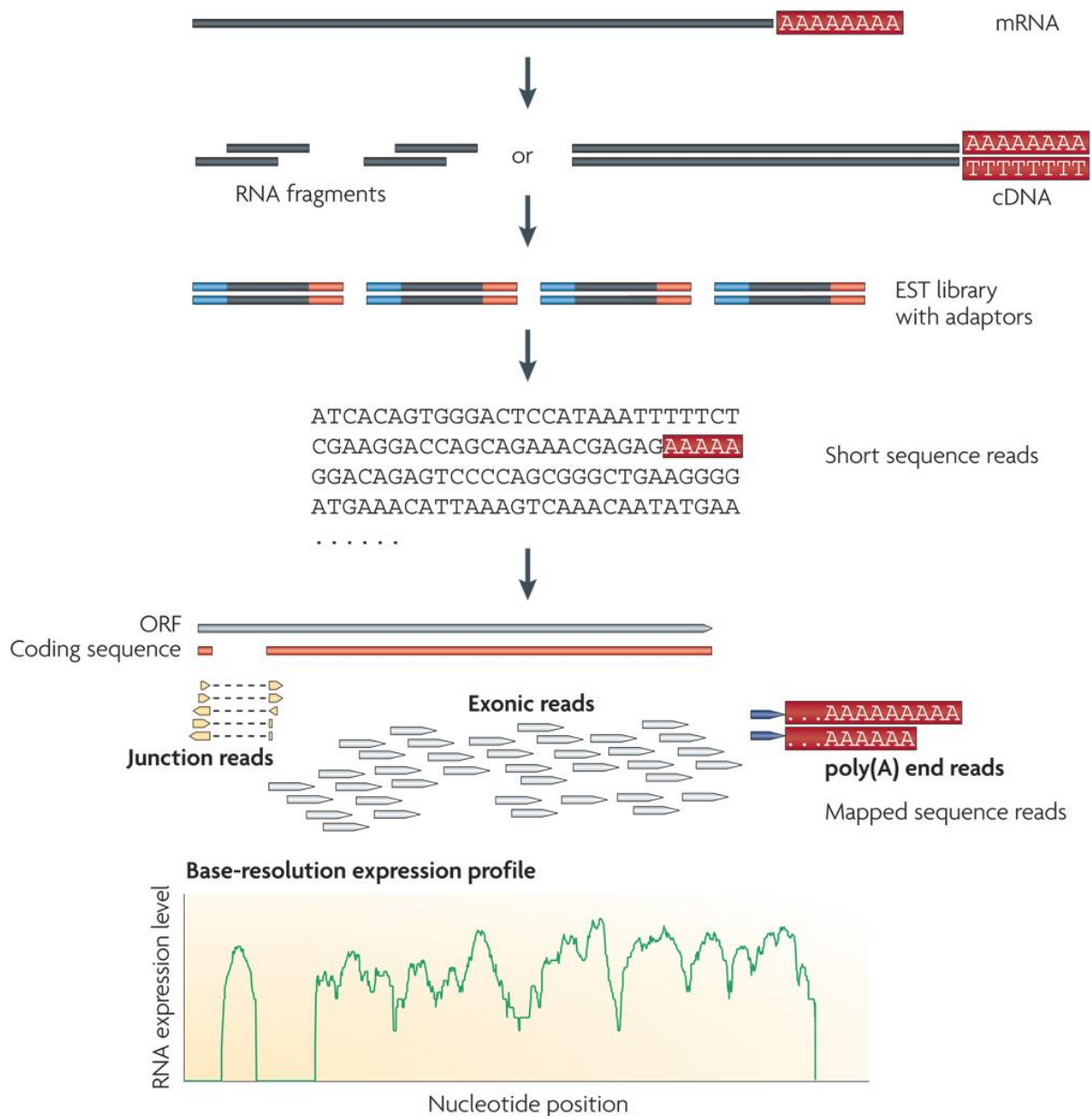


Figure 1. A schematic representation of typical RNA-Seq experiment (adapted from Wang *et al.*, 2009).

A literature review of RNA-Seq analyses revealed that the number of sequences utilised ranged from 20 to 100 million reads per sample, depending on the research aim. Basic gene expression is focused at the lower end whereas, the upper end is used to examine novel and rare transcripts (Glaus *et al.*, 2012). RNA-Seq is used for various applications via several pipelines. Conesa *et al.* (2016) reviewed main stages of RNA-Seq data analysis as shown in Figure 2.

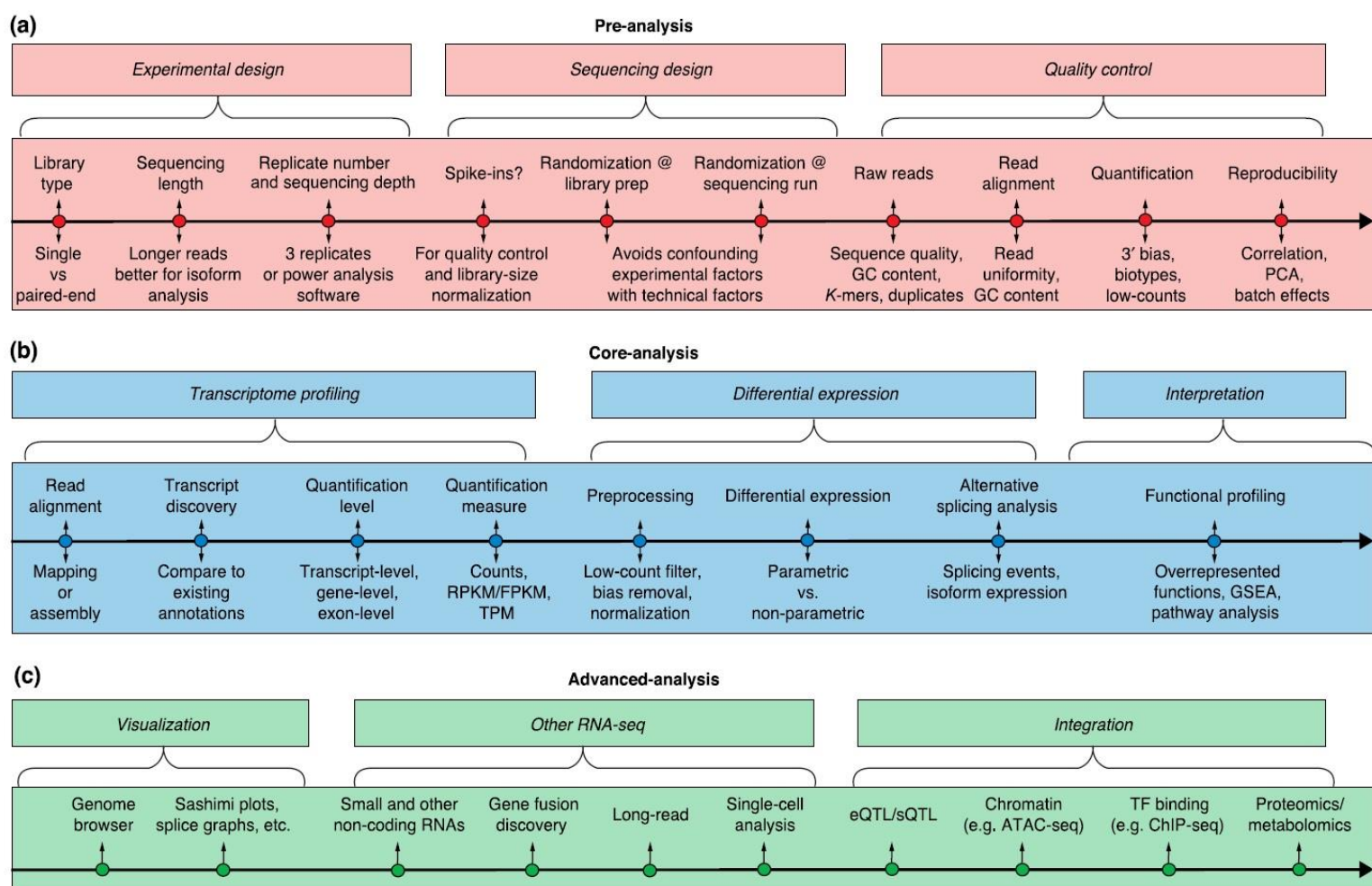


Figure 2. Main pipelines used in RNA-Seq analysis. a) Pre-analysis involves experimental design, sequencing design, and quality control steps. b) Core-analysis involves transcriptome profiling, differential gene expression, and interpretation. c) Advanced-analysis involves visualization, other RNA-Seq technologies, and data integration (from Conesa *et al.*, 2016).

Microarray technology has lost its popularity against next generation sequencing (NGS) with the recent developments. The biggest superiority of NGS is its cost. Moreover, the simpler methods of NGS also made it preferable by scientists. The statistics, in last decade, show the obvious increase of the NGS studies including chromatin immunoprecipitation (ChIP), gene expressions and methylation (Glaus *et al.*, 2012).

The advantages of NGS are considerable and benefits gene expression researchers considerably as it allows the transcriptome to be examined in significantly greater detail. No prior knowledge is required from databases for RNA-Seq, although it is required for microarrays (to design the probes) (Degner *et al.*, 2009). The other advantage of RNA-Seq is that it offers a broader dynamic range due to discrete quantifying ability (i.e. the counts of sequencing reads represent expression); this is not possible with microarray technology

which is restricted by background and signal saturation at the low and high expression levels, respectively. Increased specificity and sensitivity for genes, transcripts, and differentially expression can be obtained by RNA-Seq (Goncalves *et al.*, 2011). Moreover, RNA-Seq can also detect rare and low-abundance transcripts (Glaus *et al.*, 2012).

2.4. BIOINFORMATICS

Bioinformatics is the interdisciplinary science which contains applications of computer and life sciences. According to Yu *et al.* (2004), bioinformatics is the combination of biology and informatics which uses computer technology to access annotation of DNA, RNA and macromolecules such as proteins. Nowadays, it has gained a strong position in the field of molecular biology and has covered some issues ranging from structural biology to gene expression studies.

The aims of bioinformatics can be examined in three parts. Firstly, organising the data which researchers can easily reach then saving new records quickly as the data are being produced (Yu *et al.*, 2004). Data stored in the database are unusable until they are analysed. Therefore, the second goal of bioinformatics is developing tools and resources to make sense of these data. Improving these resources need expertise in computational sciences. The third object of bioinformatics is to analyse data by using these tools and transform into biologically meaningful information (Lesk, 2002; Yu *et al.*, 2004).

In early 2000s, the investigation of the genome had become a major field of bioinformatics. As a result of available genome sequences, the studies of genetic variability between and within organisms have been increased. Recent advances also made functional gene characterization and predictions available to define paralogs, protein families, and ortholog genes (Andersen *et al.*, 2008).

2.5. GALAXY

Galaxy (Goecks *et al.*, 2010) is a scientific workflow system which was written in the Python programming language by the Galaxy Team including experts from Penn State and John Hopkins Universities. The missions of Galaxy project can be classified as; accessibility, reproducibility, and transparency (Blankenberg *et al.*, 2010). Galaxy is accessible for the experimental biologists who do not have enough programming skills. It provides a user-friendly interface and fills the gap of biomedical researchers without computational skills (Afgan *et al.*, 2016). Galaxy is reproducible which can capture the information, therefore,

give chance anyone to repeat the experiment. This feature provides a great advantage for researchers as they would need to have same libraries, environmental variability, pathways, etc. if they used someone else's shell script. Finally, Galaxy project aims to be transparent which means providing scientists to share or publish any of their Galaxy objects (Hillman-Jackson *et al.*, 2012). Galaxy objects cover pages, histories, datasets, workflows and data libraries. Galaxy can be used as a free public web server, which is supported by the Galaxy Project, or as open-source software, which can be installed locally and customized for special needs (Afgan *et al.*, 2016).

In our analysis, Galaxy project was used to analyse the large datasets produced by NGS technology, which needs both complex statistical and computational skills, besides substantial computational power.

2.6. RNA-Seq STATISTICS

RNA-Seq provides several superiorities such as dynamic range increase and detection ability of unknown transcripts over microarray technology. However, there are also structural deficiencies in handling the data and computational challenges (Wang *et al.*, 2009). For instance, the variation in nucleotide composition among genomic regions breaks uniformity. The mapping success of short and long reads is not same, either. Finally, differentially expressed genes are detected under the assumption of that all samples are the same within-group (McCarthy *et al.*, 2012a). The computational challenges can be mainly classified into three groups as i) mapping of the reads, ii) transcriptome reconstruction and iii) quantification of expression (Garber *et al.*, 2011). In this section, the quantification of expression will be explained.

Statistical analysis is used to decide if the observed difference of read counts is larger or smaller than expected by the variation that occurs randomly. There are several software packages which are freely available and commonly used in RNA-Seq technology. Examples include *baySeq* (Hardcastle and Kelly, 2010), *Cuffdiff* (Trapnell *et al.*, 2013), *DESeq* (Anders and Huber, 2010), *edgeR* (Robinson *et al.*, 2010), *limma* (Smyth *et al.*, 2005), and *PoissonSeq* (Li *et al.*, 2012). In order to decide best statistical method, some measurements are vital to be considered. These are; i) normalization of count data, ii) sensitivity and specificity of detection, iii) efficient detection of genes which are expressed in one condition rather than all, and iv) performance on short sequences and a small number of replicates (Rapaport *et al.*, 2013).

In statistical analyses, normalization is used to consolidate large differences in the number of sequences in order to compare accurately between sample groups. Normalization is applied in various ways by RNA-Seq statistical tools (Zhou *et al.*, 2014). For example, *DESeq* creates a scaling factor by using the median of the ratios of observed counts (Anders and Huber, 2010).

Poisson and negative binominal distributions are the most common statistical models used for differentially gene expression. The advantage of poison distribution is its simplicity compared to other models. It has one parameter while negative binominal distribution has two parameters (Rapaport *et al.*, 2013). However, the restrictiveness of poison distribution which does not control for the probability of false discoveries is a disadvantage (Anders and Huber, 2010). The negative binominal distribution, therefore, has been offered by methods such as *edgeR* and *DESeq* to cope with this problem (Zhou *et al.*, 2014). In this study, package *DESeq2* (Love *et al.*, 2014), an upgraded version of *DESeq*, was used to identify differential expression signals in RNA-Seq data.

2.7. SINGLE-NUCLEOTIDE POLYMORPHISMS (SNPs)

SNPs define the single nucleotide variation at a particular position of the genome with the approximate frequency of one in 1,000 bp (Brookes, 1999). During new cell production, it is seldom that many mistakes occur. However, while the copying process of the genome; single base pairs sometimes gets left out, added or substituted (Edelman and Gally, 2001).

In 2009, there were 2 million known bovine SNPs were available in the Single Nucleotide Polymorphism Database (dbSNP) (Sherry *et al.*, 2001) based on a single breed. Additionally, Eck *et al.* (2009) provided more than 2 million novel SNPs to public available SNP resources of bovine which account for many of the genetic differences between individuals. Some of SNPs account for differences in appearance; others can affect how animals develop diseases or respond to drugs. Most SNPs, however, seemed to lead to no observable differences between animals at all (Gill *et al.*, 2009).

SNPs can occur in exons or introns which are coding and non-coding regions, respectively (Figure 3). There are also two different types in the coding region which are synonymous and nonsynonymous SNPs. Synonymous SNPs do not change the protein sequence, however, the function of the protein can be affected (Williams and Oleksiak,

2011). Nonsynonymous SNPs, which have two types (missense and nonsense), affect the amino acid sequence of proteins.

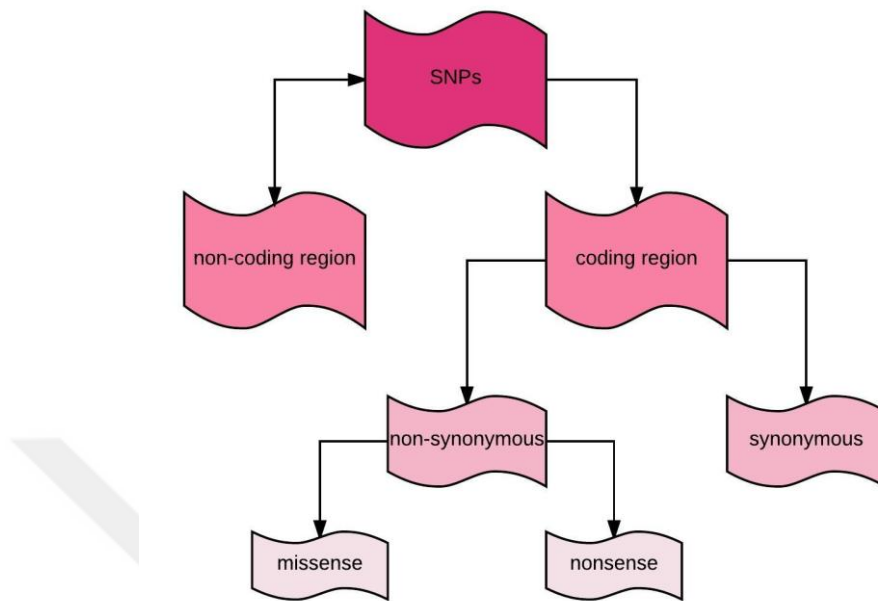


Figure 3. Types of Single Nucleotide Polymorphism (SNPs)

Nonsense SNPs cause smaller proteins than the actual length by encoding a premature stop codon. Missense SNPs alter the amino acid that results differences in the protein. Missense SNPs are mostly thought to cause disease. However, there are also missense SNPs which may act neutral and do not lead to appreciable protein changes (Edelman and Gally, 2001).

The other importance of SNPs is that they may provide superiority such as competing with other individuals or adapting the environment (Zinser and Kolter, 1999). Moreover, SNPs can provide improvement for farm animals in economic traits (Ly *et al.*, 2013).

2.8. MULTI-TISSUE OMICS ANALYSES

RNA-Seq has been used to better understand the function of various tissues in mammals (Mortazavi *et al.*, 2008; Merkin *et al.*, 2012; GTEx Consortium, 2015). A literature review revealed several multi-tissue RNA-Seq analyses on bovine (Harhay *et al.*, 2010; Canovas *et al.*, 2014; McGettigan *et al.*, 2016). A comprehensive study by using transcriptomics data to provide significant knowledge to be able to enlighten the genomic biology of an organism is called a gene atlas. Harhay *et al.* (2010) generated The Bovine Gene Atlas one year following the first assembly of the Bovine genome. They prepared 92

different tissue classes such as respiratory, hematopoietic, cardiovascular, viscus, glandular, integument, muscular, connective, trunk, nervous system, sensory organ, reproductive, embryo, skeletal, and limb. These tissues were taken from adult, juvenile and fetal individuals of Hereford, Angus, Guernsey and Holstein breeds. The bovine gene atlas presented similarities and differences in tissue samples and relationship of tissue, gene expression, and gene function.

Another bovine multi-tissue study (Canovas *et al.*, 2014) investigated puberty period which contains complex interactions of several tissues. The gene expression of eight bovine tissues such as ovary, uterus, endometrium, hypothalamus, hypophysis, adipose, liver and muscle were compared as before and after puberty period of cows. The RNA-Seq analysis identified 1,515 DEGs of which 943 is tissue-specific within eight tissues among before and after puberty period of cows.

Using RNA-Seq, McGettigan *et al.* (2016) analysed bovine data of multi-tissues such as the cervix, endometrium, embryos, granulose cells, hypothalamus, leukocytes, liver, muscle, pituitary gland and theca cells. Their experiment detected that more than 95% of genes were shown to some level of tissue-specificity. However, the amount was less than 1% for highly specific genes while 2% of them are identified as having housekeeping characters.

In this study, brain, endometrium and liver tissues are selected for their important roles in regulation processes of bovine metabolism; brain and muscle are selected due to their direct influence on agricultural industry. Identifying tissue-specific genes in multi-tissue analysis will provide better understanding to biological mechanisms underlying essential functions. Additionally, SNPs of some tissue-specific genes will be shown that has not been linked in any previous multi-tissue study.

2.8.1. Liver

The liver in cows is important in roles including glucose production/synthesis, antibody production, and ammonia detoxification which consume high amount of energy (Jungermann and Katz, 1989). Utilization of the energy is one of the critical functions that controls efficiency of farm animals. Especially during lactation, animals require three times more energy (Nafikov and Beitz, 2007). Milk synthesis and reproduction system of the cow needs a high amount of glucose which increases the duty of the liver (Costa *et al.*, 2003).

Negative energy balance (NEB) is the state when energy requirement of maintenance and lactation is greater than dietary intake (Wathes *et al.*, 2009). During NEB, the liver converts fat to produce required energy. In the fatty liver condition, ketosis is the potential case which blocks the liver's function (Wathes *et al.*, 2008). The effect of NEB period in liver was studied by McCabe *et al.* (2012). They used RNA-Seq to compare expression profiles of cattle liver which are either in mild or severe negative energy balance. The analysis indicated differentially expressed genes in cattle which were having severe negative energy balance (SNEB). These genes were mostly responsible for fat metabolism. Moreover, they discovered that the differential gene expression of SNEB cows was associated with steroid hormone biosynthesis which is typically seen in reproductive tissues.

In other NEB study, Laporto *et al.* (2013) recruited Angus, Hereford, and their F1 crossbreeds to check how their liver adapt to NEB while grazing on high or low herbage allowances. Their experiment showed a total of 225 genes were differentially expressed between herbage allowance which was mostly in charge of glucose and pyruvate metabolism.

The detoxification function of the liver was also studied. Although the ban on anabolic steroids in EU, they have been still used legally by US farmers. It was a challenge to find how these steroids effect on muscle which is the target tissue and liver where biotransformation occurs. Therefore, Elgendy *et al.* (2016) analysed the consequences of combined steroids (trenbolone acetate (TBA, 200 mg) and estradiol-17 β (E2, 40 mg) on the transcriptome of these two tissues. They found 20 commonly expressed genes in these tissues, although muscle and liver had 431 and 503, differentially expressed transcripts, respectively. Their study revealed that anaerobic steroids have a complex of numerous pathways and processes which cause distinctive transcriptomic profiles.

The cow liver has also been investigated for the periparturient and late pregnancy periods. West *et al.* (1990) compared periparturient cows with non-pregnant non-lactating cows. Significant changes were found in plasma total bilirubin, glucose, total ketone body and urea concentrations which show the association of liver with functional metabolic demands of the periparturient period. Moreover, the gene expression profiling of liver during periparturient period and its physiological events in various organs is schematized in Figure 4 (Loor *et al.*, 2005). Identifying the tissue-specific expressed genes in liver will further enlighten these biological mechanisms and help our understanding of their underlying essential functions.

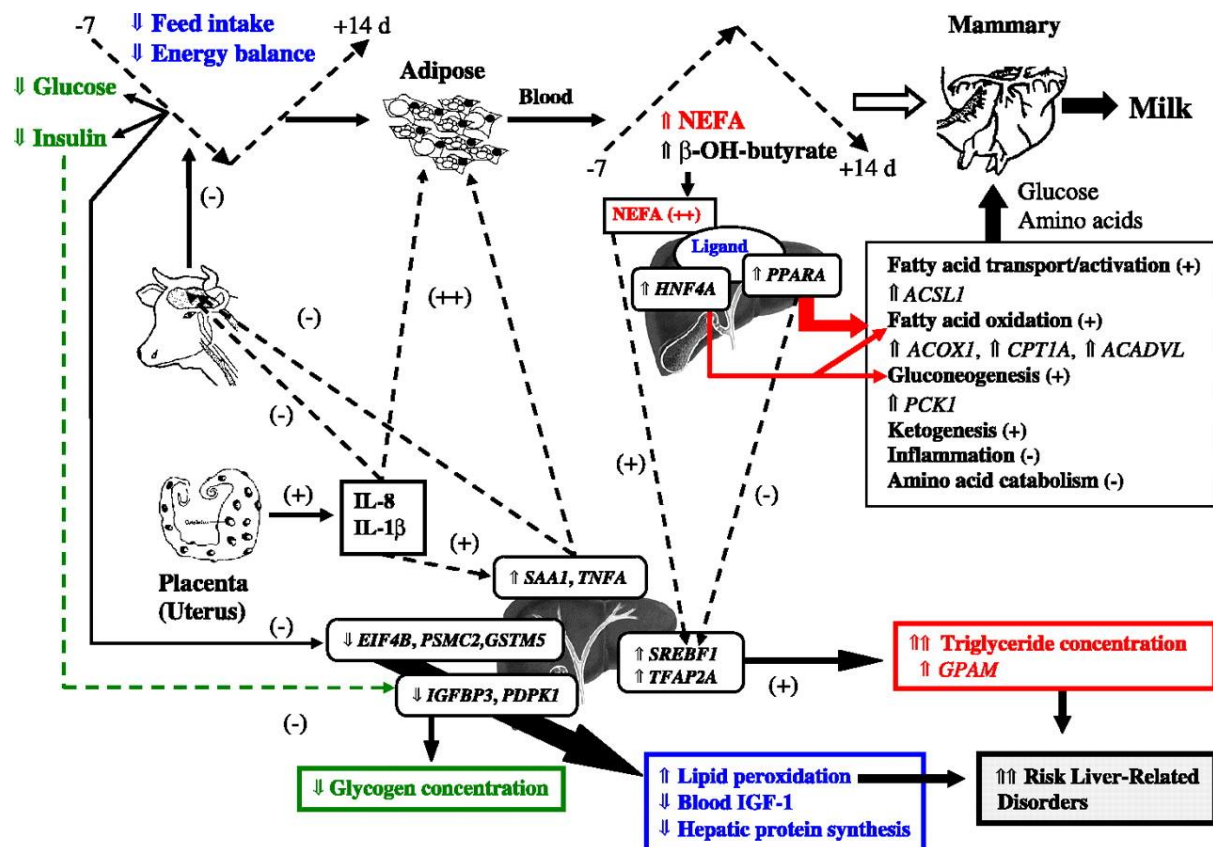


Figure 4. A schematic representation of the liver gene expression of a cow during the periparturient period (from Loor *et al.*, 2010).

2.8.2. Brain

Although the brain of cow equals about 0.1 percent of its body weight, it has several vital roles as it is the main part of the central nervous system. It leads the whole body in two ways which are the generation of muscle patterns and hormone secretion. This allows rapid and coordinated responses to environmental changes (Kapoor *et al.*, 2003).

However, most cow brain research has been related to bovine spongiform encephalopathy (BSE), commonly known as mad cow disease (Wang *et al.*, 2014a). BSE is a neuro-degenerative fatal brain disease caused by a prion (Prusiner *et al.*, 1998). There is little information about gene expression in the cow brain however; hypothalamus and pituitary gland were studied quite a lot by microarray and RNA-Seq technology.

Hulsegge *et al.* (2012) studied the relationship between oestrous behaviour and the gene expression profile of the four brain areas (amygdala, hippocampus, dorsal and ventral hypothalamus) and the anterior pituitary. A number of potential genes involved in oestrus and oestrous behaviour processes were reported: 23, 53, 59, 71 and 89 for pituitary, hippocampus,

amygdala, ventral and dorsal hypothalamus, respectively. These genes were found to be responsible for neurotransmission and neuronal plasticity activities.

Puberty is the transition period to become capable of sexual reproduction and involves many complex processes. The hypothalamus and pituitary glands are the most notable tissues involved in puberty (Day and Nogueira, 2013). Canovas *et al.* (2014) studied transcriptomes from multi-tissues (total amount of 8) which include reproductive tissues (endometrium, hypothalamus, ovary, pituitary gland and uterus) and metabolism related (liver, adipose, and *longissimus dorsi* muscle). These tissues were analysed using RNA-Seq just after collecting from pre- and post-pubertal heifers of Brangus breed which were developed to utilize superior traits of Angus and Brahman cattle (3/8 Brahman, 5/8 Angus). The hypothalamus was the tissue with the most significantly up-regulated its genes during puberty. DPPA4 and C10H11ORF46, RHEBL1, MEPE and PENK were the group of genes which both harbour SNPs associated with heifer fertility traits and differentially expressed in puberty from hypothalamus and pituitary gland, respectively. Their study was just one example of multi-tissue omics technology in cattle which shows complex interactions for puberty.

Sexual dimorphism is the different characteristics of two sexes within species beyond sexual organs. Association of molecular mechanism with sexual dimorphism in cattle has not been fully understood. Although the entire brain of the cow shows sexually dimorphic phenotypes, the main controllers of sexual dimorphism in central nervous system is pituitary gland together with the hypothalamus (Gomez *et al.*, 2013). The endocrine regulation of metabolism, growth, and sexual maturation is performed by the pituitary gland. Seo *et al.* (2016) investigated bovine sexually dimorphic genes. They used tissue samples from adipose, liver, *longissimus dorsi* muscle and pituitary gland. Their RNA-Seq analyses showed 752 sexually dimorphic genes across tissues, which reveal various biological processes due to sexual dimorphism of metabolic tissues and pituitary gland. The experiment also reported 57 differentially expressed gene in pituitary gland including tissue-specific genes such as GRP, LOC781146, and LYSB. Moreover, they defined the shared differentially expressed genes in cattle and rat species such as CUX2, DDX3Y, USP9Y, and ZNF280B.

2.8.3. Adipose

Adipose tissue, primarily, functions as energy deposits in the form of triacylglycerol (Schweiger *et al.*, 2006). Moreover, it plays significant roles for body temperature losses, protective padding in the skin/around organs and regulator of appetite and energy expenditure

through its endocrine activity (McNamara, 1994). Additionally, adipose tissue is involved in reproduction, inflammation, and immune response (Pinent *et al.*, 2008).

There are two types of adipose tissue; brown and white, which differ in function, size, vascularity, colour and metabolic activity. However, the adipose tissue can be categorized into three groups as they are found in the animal body. These groups are subcutaneous fat deposits, which are found under the skin; intramuscular fat, which is found between muscle fibre bundles of a muscle; and omental fat deposits which surround organs (Sbarbati *et al.*, 2010).

Lee *et al.* (2013) analysed sequence reads which were obtained from Illumina HiSeq2000 by using RNA-Seq technique. These sequence reads were taken from three different adipose depots, including intramuscular, omental and subcutaneous fat. They showed 5455 differentially expressed genes between intramuscular and subcutaneous, 2156 DEGs between omental and subcutaneous, and 5795 DEGs between omental and intramuscular fats in cattle. Intramuscular fat is the adipose group that is related to marbling which is preferable to consumers due to tenderness and flavour of the meat. The variation of marbling percentage is huge among breeds. For example, Japanese Black cattle have 23% of intramuscular fat content while this value is between 0.5 and 4.6% in European breeds (Gotoh *et al.*, 2009).

The adipose tissue mainly is the most important tissue in farm animals, as economic value is determined by the adipose percentage of the body weight, which transfers feed into edible food products for humans. Moreover, the importance of adipose tissue in dairy cows is vital for milk production. Hence, finding tissue-specific genes in adipose may be important for breeding programmes (Sauerwein *et al.*, 2014). The gene expression profile of adipose tissue has been analyzed by both microarray and RNA-Seq (Sadkowski *et al.*, 2013; Liu *et al.*, 2015a).

Muscle of different cattle breeds can give the detailed information about adipose mechanism as beef marbling is various in breeds. To understand this, Sadkowski *et al.* (2013) compared three different breeds including Limousin, Holstein-Friesian and Hereford bulls. The results of their experiment showed 144 genes were significantly different for lean and marbled beef breeds. These genes were involved in various steps of adipose tissue development to change fat content and marbling development.

Sumner-Thomson *et al.* (2011) conducted a transcriptomic analysis of adipose tissue of dairy cows in late pregnancy and early lactation to check the changes of gene expression between 30 day prepartum and 14 day in milk in first-lactation animals. In their study, they found that some genes which are responsible for synthesizing proteins that control fatty acid transport were highly expressed. Genes such as ADRB2 and LIPE that controls lipolysis showed increased expression. However, genes such as ACACA, LPL, SREBP and TSHP14 that encode enzymes to control lipogenesis showed decreased expression. This study was important to identify adaptation of adipose tissue in lactating animals.

2.8.4. Endometrium

The endometrium is located in cow uterus as the inner epithelial layer. There are two layers of the endometrium known as the basal and functional layers. The functional layer is close to uterine cavity and modified for providing optimum surroundings for placement and growth of the embryo. The basal layer, which is located below the functional layer, constricts and leads to menstruation. The endometrium lines the uterus, prevents adhesions between opposed walls of the myometrium, thus maintains the patency of the uterine cavity (Gray *et al.*, 2006).

Studies for gene expression profiling in the endometrium, have been mostly focused on pathology (Williams, 2013). Cows can get bacterial infection in the uterus after giving birth and a significant number of cows fails to recover from this infection causing cytological endometriositis and compromised fertility (LeBlanc *et al.*, 2002). The transcriptional changes of the immune system can be useful to understand the postpartum uterine disease. Foley *et al.* (2015) compared gene expression in the endometrium of healthy and sick animals by RNA-Seq. 73 genes including complement proteins, cell surface receptors, pathogen recognition receptors, chemokine ligands, cytokines, antimicrobial peptides and acute phase proteins were found differentially expressed between these animals.

Livestock production systems commonly use artificial insemination, however, in cattle species the first two weeks just after insemination is the most sensitive period when a significant amount of embryo loss occurs as the embryos are dependent on the maternal uterine environment (Diskin and Morris, 2008). Hence, whatever happens in endometrium should be understood to decrease embryo loss. Killien *et al.* (2014) investigated the differences in endometrial gene expression in two groups of animals, which were high or low fertile. The analysis was conducted by microarray and showed differentially expressed genes

that are responsible for angiogenesis, cellular and tissue morphology and developments, cellular growth and proliferation, inflammation and metabolic exchange. The importance of these results was that differentially expressed genes may influence cow fertility and be considered for future breeding programmes (Killien *et al.*, 2014).

The aim of the other study with pregnancy was to detect how soon the cow responds the changes. Forde *et al.* (2011) used microarray technology to see the differential gene expression in the endometrium. The experiment resulted in finding 764 genes such as BST2, ISG15, OAS1, IFI44, ISG20, OXTR, SAMD9, KCNMA1 and EIF4E which increased or decreased their expression on Day 16. The study was useful to detect the conceptus by endometrium at the earliest stage. Identifying gene expression of endometrium may enlighten biological processes, the underlying genes and functional networks influencing pregnancy success (McCarthy *et al.*, 2012b).

Gene expression is also affected by hormone treatments. Shimizu *et al.* (2010) found in the endometrium of steroid-treated animals that transcription factors including ESR1, FOXA2, IRF2, NFYA, SPI and candidate regulator (NOBOX) were differentially expressed. This study provided novel information to steroid treatment that is highly used for livestock production.

Negative energy balance has been reviewed for the gene expression profile of endometrium as well. Wathes *et al.* (2009) found that some interferon-inducible genes in endometrium such as IF1H1, ISG20, MX1 and MX2 showed more expression in animals that have severe negative energy balance (SNEB) compared to mild negative energy balance (MNEB). The same results were also found by Minten *et al.* (2013). Hence, it can be concluded that it takes more time for SNEB animals to reach the stage of endometrium repair than MNEB cows which are already recovered from the energy deficiency.

Calving interval is one of the traits used to assess reproductivity and important for profitable milk production. Moran *et al.* (2015) recruited animals which had similar genetic merit for milk production but different for fertility. The excellent and indigent fertile animals were analysed to test the hypothesis of a high detectable difference in endometrial gene expression with Fert+ cows. The experiment succeeded to show 403 significantly differential gene expressions between two groups.

2.8.5. Muscle

Bovine muscle tissue has an economic importance all around the world. Hence, livestock producers for beef primarily aim to improve muscle growth. Briefly, functions operated by muscle tissue are movement and location, and heat generation (Ceglia, 2008). The structure of muscle tissue is formed by muscle fibres and connective tissue, which has two kinds as collagen. These components are of vital importance as they are highly related to consumers' choices, such as juiciness and tenderness (Koohmaraie *et al.*, 2002). As the muscle development involves both contractile muscle cells and the expansion of extracellular matrix and blood vessels, it is very complex. Therefore, understanding the muscle-specific gene profile can enlighten muscle development and growth (Gillies and Lieber, 2011). The literature review revealed a number of studies to understand the gene profile of muscle tissue in bovine (Komolka *et al.*, 2015; Keogh *et al.*, 2016).

Beef producers use intramuscular fat (IMF) content in bovine skeletal muscle named *Musculus longissimus dorsi* (MLD) as a meat quality marker. Although the nutritional and other environmental conditions affect this content, genetic factors should not be underestimated. Komolka *et al.* (2015) recruited two groups of beef cattle which have low and high IMF content in MLD. The experiment results with high IMF group indicated 11 and 21 differentially expressed genes which were up- and down-regulated, respectively.

Livestock producers use various methods to reduce costs and improve animal growth. One of them is compensatory growth (CG) which is accelerating growth following a period of restricted feed intake. Although this system is used world widely, the molecular mechanism of CG expression remains unclear. Keogh *et al.* (2016) aimed to discover underlying biology that regulates CG in cattle. They recruited 20 Holstein-Friesian cows and separated them into two groups. First, the animal group was fed with a target growth rate (Period 1) and then ad libitum (Period 2). The other group was fed ad libitum for the entire trial. RNA-Seq analysis showed 1,430 and 940 differentially expressed genes in Period 1 and 2 respectively. In Period 1, lipid metabolism and energy production associated genes were altered while mostly cellular function and organization genes were changed in Period 2. Future breeding programmes can be adapted involving the differentially expressed genes by using them as biomarkers of CG and feed efficiency.

Despite the ban on using anabolic steroid in EU, they are still legal and frequently used in USA (Directive, 1996; Elgendy *et al.*, 2016). The effects of anabolic steroid treatment

on muscle tissue were studied by De Jager *et al.* (2011). By using microarray, they identified 121 differentially expressed genes such as MYOD1, MYOG, MSTN, FST, IGF1, TH, and GH which are mostly responsible for fat metabolism. Pegolo *et al.* (2014) were another scientist group to examine the effects of steroid treatments. They were able to detect genes between control and corticosteroid-treated animals groups although there were different variations for breeds, age and growth promoter treatment. The results were obvious to show the harm of excessive growth usage.

Nutrition has a great impact on transcription of different tissues. Moreover, not only nutrition of the cattle itself but also its mother's feeding change long-lasting transcriptions, which may affect meat quality (Greenwood and Cafe, 2007). Moisa *et al.* (2015) compared *longissimus* muscle samples of early and normal weaned calves, which were grazed with the low and medium plane of nutrition. Microarray analysis showed 35 differentially expressed genes such as ACLY, ARAP1, C15orf40, CHST12, DEXI, DHDH, PYCR1, SCUBE1, SERF1A, SRSF5, TAGLN3 between feeding groups. Within early weaned age and medium nutrition fed animal-groups more than 150 genes were significantly impacted which mostly control lipogenic activity.

2.9. THESIS OBJECTIVES

Bovine breeds are crucial for agricultural and rural economies in the developing world by providing milk, beef, leather and other products. Organs like liver, brain, and endometrium are involved in a range of complicated processes that directly affect the life quality of the animals. Moreover, muscle and adipose tissue have an impact on economic choices.

Great numbers of data have been generated in recent years, due to technological advances. The bovine whole genome has been sequenced, however, the gene annotations of various tissues remain poorly understood. Tissue-specific genes or housekeeping genes of bovine have yet to be elucidated. The aim of this study is to identify tissue-specific genes in various tissues that are thought to play vital roles in livestock production.

2.9.1. Hypotheses

The hypotheses of this investigative study are that:

- Can we determine the genes that are most significant to different tissues in cattle based on their gene expression profile?
- Can we identify the genes that could be targeted in genomic selection studies for increases in performance traits related to each tissue?

3. MATERIALS AND METHODS

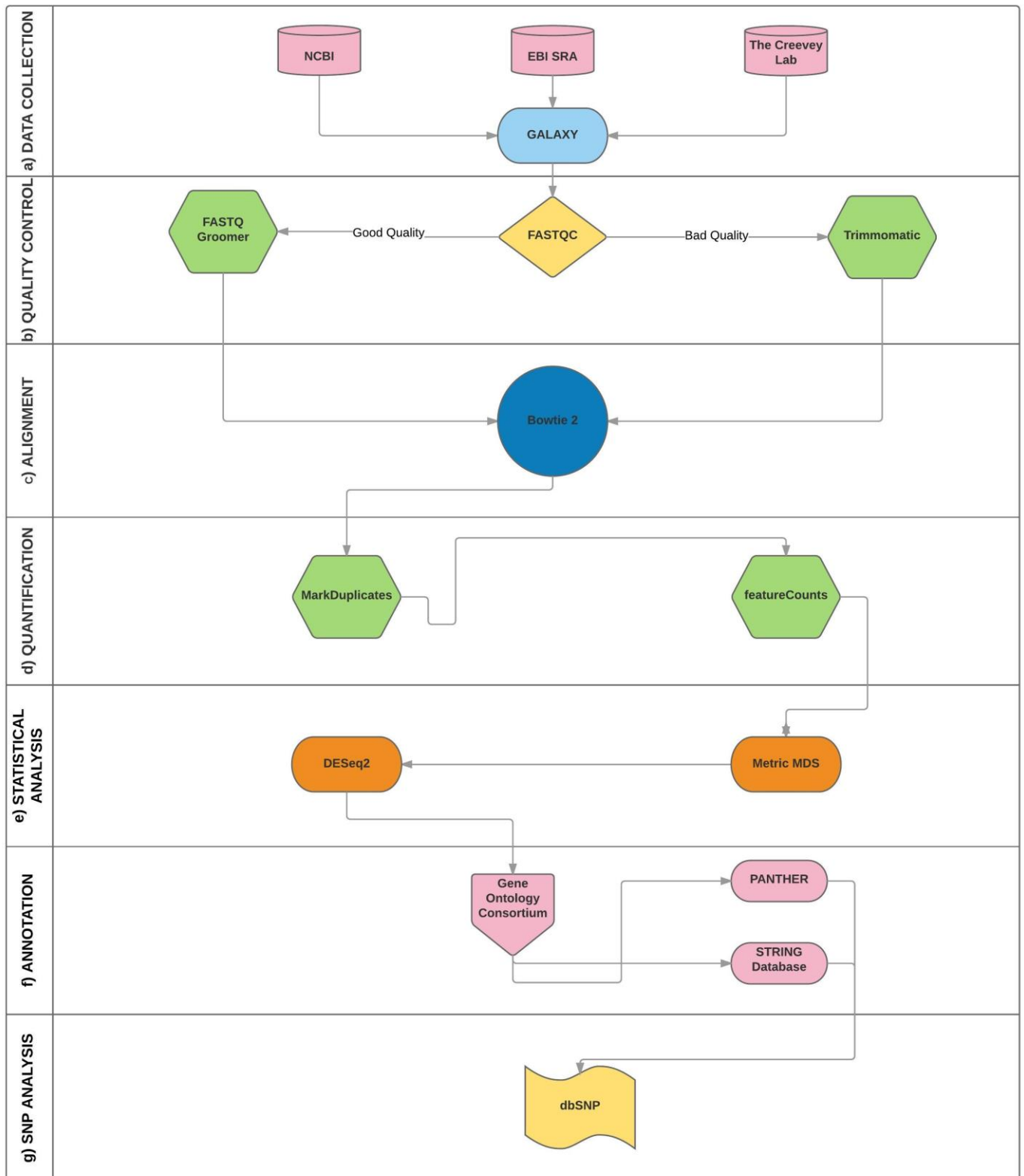


Figure 5. Flow chart of the methodology. The experiment has been performed in 7 steps involving a) data collection, b) quality control, c) alignment, d) quantification, e) statistical analysis, f) annotation, and g) SNP analysis.

3.1. DATA COLLECTION

In this experiment, most of the data were obtained from NCBI GEO. Therefore, SRA Toolkit was used. SRA Toolkit is a program which allows the users accessing the data housed within SRA and converting it from SRA format to following formats; *ABI SOLID native*, *fasta*, *fastq*, *sff*, *sam* and *illumina native* (Leinonen *et al.*, 2010a). The commands below were used to access SRA Toolkit and convert the SRA format to *fastq*. The last command executes the splitting of paired-end sequence files.

```
module load sratoolkit
nohup fastq-dump -v -gzip SRR490771 &
fastq-dump --split-files -v SRR1587665
```

However, some datasets were larger than the upload limit in Galaxy. In these cases, the built-in tool in Galaxy for accessing the European Nucleotide Archive (an organisation of European Bioinformatics Institute) (Leinonen *et al.*, 2010b) was used (Get Data → EBI SRA) to download these datasets. The Creevey Lab was the alternative source to obtain data from the studies which have not been published yet. All data used in the experiment are detailed in Table 1.

Table 1. Table of data description taken from previous studies.

NO	TISSUE	LABEL	SRR CODE	LIBRARY TYPE	GEO ID	References
1	LIVER	L1	SRR1607588	PAIRED	GSM1520629	C. Creevey, personal comm., 2016
2	LIVER	L2	SRR1767625	PAIRED	GSM1587665	Seo <i>et al.</i> , 2016
3	LIVER	L3	SRR490771	SINGLE	GSM921429	McCabe <i>et al.</i> , 2012
4	LIVER	L4	SRR1192216	SINGLE	GSM1347942	Fatima <i>et al.</i> , 2014
5	LIVER	L5	SRR042077	SINGLE	GSM538513	Harhay <i>et al.</i> , 2010
6	LIVER	L6	SRR042134	SINGLE	GSM538570	Harhay <i>et al.</i> , 2010
7	MUSCLE	M1	SRR924522	PAIRED	GSM1179657	C. Creevey, personal comm., 2016
8	MUSCLE	M2	SRR3419168	SINGLE	GSM2131129	M. Qu and Z. Yang unpubl. data
9	MUSCLE	M3	SRR1178458	SINGLE	GSM1336721	Canovas <i>et al.</i> , 2014
10	MUSCLE	M4	SRR527003	PAIRED	GSM973204	Lee <i>et al.</i> , 2013
11	MUSCLE	M5	SRR1767623	PAIRED	GSM1587663	Seo <i>et al.</i> , 2016
12	MUSCLE	M6	SRR1271865	SINGLE	GSM1379566	Liu <i>et al.</i> , 2011
13	MUSCLE	M7	SRR527030	PAIRED	GSM973231	Lee <i>et al.</i> , 2014
14	MUSCLE	M8	SRR836162	PAIRED	GSM1131345	Huang <i>et al.</i> , 2014
15	ENDOMETRIUM	E1	SRR1030524	SINGLE	GSM1266832	Moran <i>et al.</i> , 2015
16	ENDOMETRIUM	E2	SRR1913839	PAIRED	GSM1632780	Foley <i>et al.</i> , 2015
17	ENDOMETRIUM	E3	SRR3505355	PAIRED	GSM2152647	TW. Geary <i>et al.</i> , unpubl. data
18	ENDOMETRIUM	E4	SRR2659939	PAIRED	GSM1909304	Moore <i>et al.</i> , 2016
19	ENDOMETRIUM	E5	SRR1178446	SINGLE	GSM1336709	Canovas <i>et al.</i> , 2014
20	ENDOMETRIUM	E6	SRR546563	PAIRED	GSM991201	Foley <i>et al.</i> , 2012
21	ADIPOSE	A1	SRR527014	PAIRED	GSM973215	Lee <i>et al.</i> , 2014
22	ADIPOSE	A2	SRR527022	PAIRED	GSM973223	Lee <i>et al.</i> , 2013
23	ADIPOSE	A3	SRR1178460	SINGLE	GSM1336723	Canovas <i>et al.</i> , 2014
24	ADIPOSE	A4	SRR1767622	PAIRED	GSM1587662	Seo <i>et al.</i> , 2016
25	ADIPOSE	A5	SRR042101	SINGLE	GSM538537	Harhay <i>et al.</i> , 2010
26	ADIPOSE	A6	SRR926610	SINGLE	GSM1181373	Sun <i>et al.</i> , 2014
27	BRAIN	B1	SRR1658361	SINGLE	GSM1551228	Chen <i>et al.</i> , 2015
28	BRAIN	B2	SRR1178418	SINGLE	GSM1336681	Canovas <i>et al.</i> , 2014
29	BRAIN	B3	SRR594473	PAIRED	GSM1020720	Merkin <i>et al.</i> , 2012
30	BRAIN	B4	SRR947913	SINGLE	GSM1201504	C. Creevey, personal comm., 2016
31	BRAIN	B5	SRR1178427	SINGLE	GSM1336690	Canovas <i>et al.</i> , 2014
32	BRAIN	B6	SRR1767624	PAIRED	GSM1587664	Seo <i>et al.</i> , 2016
33	BRAIN	B7	SRR042079	SINGLE	GSM538515	Harhay <i>et al.</i> , 2010

3.2. QUALITY CONTROL

The quality of 17 single ended data and 16 paired end sequencing datasets were analysed (separate analysis for each pair for the paired-end data) using *FastQC* (Andrews, 2010) in Linux and Galaxy. The commands used in Linux for quality control was shown below.

```
## -e /ibers/ernie/home/nee3/nee3/data/liver/fastqc_run.error
## -o /ibers/ernie/home/nee3/nee3/data/liver/fastqc_run.output
## -N fastqc
## -cwd
## -j y
## -s /bin/bash
## -m beas
## -M nee3@aber.ac.uk
## -V
## -l h_vmem=8G
## -l h_rt=8:00:00
cd /ibers/ernie/home/nee3/nee3/data/liver/
module load fastqc/0.11.2
for i in *_trimmed_*; do fastqc $i; done
```

The low-quality ends were cut by using crop command in *Trimmomatic* (Bolger *et al.*, 2014) operation platform. *Trimmomatic* creates different outputs based on the input data whether single-end or paired-end data. The output for single-end data is sole *FASTQ* file which contains the filtered reads. However, for paired-end, *Trimmomatic* generates four different outputs. These files can be categorized into two groups as; 1- R1 paired, R2 paired; 2- R1 unpaired, R2 unpaired. The first two *FASTQ* files have the reads from each pair where both have successfully passed filters. The second two *FASTQ* files keep the reads for which only one read passed the filtering steps. Some of the data had high quality enough and did not need trimming. For those, *FASTQ Groomer* (Blankenberg *et al.*, 2010) tool in Galaxy was

used in “Basic options” to convert the files to *Fastqsanger* format which is valid input for next step.

3.3 ALIGNMENT

Trimmed sequence reads were mapped directly to reference genome (bosTaurus UMD 3.1) using the software package Bowtie2 (Langmead and Salzberg, 2012) in Galaxy. Each read is progressed through four different steps in Bowtie2. In the first step, ‘seed’ substrings are extracted from the read and its reverse complement. The second step performs the alignment of extracted substrings to the reference genome. In the third step, the seed alignments are launched, and calculation of the index for their positions in reference genome is executed. Finally, the fourth step, SIMD (single-instruction multiple-data) - accelerated dynamic programming is used to extend seeds into full alignments (Langmead and Salzberg, 2012).

3.4. QUANTIFICATION

The aligned sequence reads (in BAM format) was taken as input for *MarkDuplicates*. *MarkDuplicates* is a command from PICARD tools (<http://broadinstitute.github.io/picard>) implemented in Galaxy which identified and marked duplicate reads in the BAM file. *MarkDuplicates* created a BAM file output in which duplicates were flagged as read pairs having identical 5’ positions for reads in a mated pair. The output of *MarkDuplicates* was accepted as input for *FeatureCounts* (Liao *et al.*, 2014). This tool can use SAM or BAM formats as input, and this can be selected automatically that saves time.

FeatureCounts exerts chromosome hashing, feature blocking and various strategies for assigning reads to features with high accuracy. Hence, it can be used for quantifying reads generated from both RNA and DNA sequencing technologies. It also provides multithreading that accelerates solutions for large data problems. *FeatureCounts* measured gene expression in RNA-Seq experiments and output to expression in a tabular format showing gene count and gene-length (tab-delimited) (Liao *et al.*, 2014).

3.5. STATISTICAL ANALYSIS

The following samples (M8, L6, A6, and B7) were found to have small numbers of reads aligning which can lead to errors in subsequent statistical analyses. After removing these samples from our data, we now had 29 datasets to make observations of differential expression for thousands of genes in different tissues. However, as the datasets were from different studies it was not possible to be certain that the samples from the same tissue were taken at similar states or time points or utilised similar preparation steps. These issues could give very different gene expressions profiles hence we carried out an analysis of the expression states of each to see if the same tissue types had similar profiles.

To do this the total gene expression values of the remaining 29 datasets were scaled to the minimum value across all the samples (which was L5). Multidimensional Scaling (MDS) (Kruskal, 1964) is a means of visualizing the level of similarity of individual cases of a dataset which represent distances between objects in a low-dimensional space. Metric MDS was used as the first step of statistical analysis before assessing our large data sets. Samples were plotted, and visually similarities and differences were observed as well as determining the possible groups.

Our dataset was too large for the R environment to run metric MDS as not enough RAM could be allocated. Hence, we used the commands below which are for reducing the size of our dataset by creating a second array that only contains the rows (representing genes) that have a value that is 5 or greater.

```
gt5<- function(x){  
  max(x) > 5;  
}  
th<-array(apply(mydata, 1, gt5));  
mydata.reduced<- t(mydata[ th == "TRUE" ,]);
```

R provides functions for classical and non-metric dimensional scaling. Euclidean distance between the rows was defined and the graph was plotted by the commands below.

```
d <- dist(mydata.reduced)
```

```

fit <- cmdscale(d,eig=TRUE, k=2)

fit

x <- fit$points[,1]

plot(x, y, xlab="Coordinate 1", ylab="Coordinate 2",

main="Metric MDS", type="n")

text(x, y, labels = row.names(mydata.reduced), cex=.7)

```

Most of the data from same tissue groups were observed to cluster. However, there were still some samples which did not cluster as expected with the same tissue type. To investigate this further, other coordinates than 1 and 2 were checked. The commands below were used to observe coordinate 1 and 3.

```

d <- dist(mydata.reduced)

fit <- cmdscale(d,eig=TRUE, k=3)

fit

x <- fit$points[,1]

plot(x, y, xlab="Coordinate 1", ylab="Coordinate 3",

main="Metric MDS", type="n")

text(x, y, labels = row.names(mydata.reduced), cex=.7)

```

This process identified tissue samples (L4, L5, B5 and B6) as outliers and subsequently removed. After removing of these samples, the rest of 25 datasets were again re-scaled to the minimum value of the all samples which now was A5. Metric MDS was also applied for the remaining samples of brain, adipose and endometrium but leaving out liver and muscle tissue samples in order to see clustering of these three tissues.

3.6. DIFFERENTIALLY EXPRESSED GENES (DEGs)

The analysis of RNA-Seq aims to find the differentially expressed genes across the groups of data. This step tries to answer if quantification and statistical inference of systematic changes between conditions is greater than within-condition variability. To do this *DESeq2* was used as it has methods to test differential expression by running negative binomial generalized linear models (Love *et al.*, 2014). The package combines methodological approaches with various new features to utilize more qualitative analysis of comparative RNA-Seq data by running shrinkage estimators for dispersion and fold variation. *DESeq2* is implemented in the R environment and was installed by using the commands below.

```
> source("https://bioconductor.org/biocLite.R")
> biocLite("DESeq2")
```

Tissue-specific differentially expressed genes were assessed individually for each tissue type by submitting commands below in *DESeq2* where “M, L, A, B, E, and O” stands for Muscle, Liver, Adipose, Endometrium, Brain and “Others”, respectively. For each comparison, the replicates for each tissue-type were compared against the expression of the replicates of all other tissue types (i.e. “others”). This identified those genes that had an expression pattern unique to the background expression pattern of all other tissue types. The commands used were as follows:

```
> setwd("C:/Users/nee3/Documents")
> mydata <- read.table ("alldata.txt2")
> raw.data <- read.delim("alldata.txt", header=TRUE,
stringsAsFactors=TRUE);
> rownames( raw.data) <- raw.data[,1];
> raw.data<- raw.data[ , -1 ];
> Tissues = c( "M", "M", "M", "M", "M", "M", "M", "O", "O", "O", "O",
"O", "O", "O", "O", "O", "O", "O", "O", "O", "O" );
> Tissues = c( "O", "O", "O", "O", "O", "O", "O", "L", "L", "L", "O", "O",
"O", "O", "O", "O", "O", "O", "O", "O", "O" );
> Tissues = c( "O", "O", "O", "O", "O", "O", "O", "O", "O", "O", "A", "A",
"A", "A", "A", "O", "O", "O", "O", "O", "O", "O" );
> Tissues = c( "O", "O", "O", "O", "O", "O", "O", "O", "O", "O", "O", "O", "O",
"O", "O", "O", "E", "E", "E", "E", "E", "E", "O", "O", "O", "O" );
```

```

> Tissues = c( "O", "O", "O", "O", "O", "O", "O", "O", "O", "O", "O", "O", "O",
"O", "O", "O","O", "O", "O", "O", "O", "O", "B", "B", "B", "B" );

> coldata = data.frame(
+ Tissues=Tissues,
+ row.names=colnames(raw.data)
+ )

> library(DESeq2)

> dds <- DESeqDataSetFromMatrix(
+ countData = raw.data,
+ colData = coldata,
+ design = ~ Tissues
+ )

> ddsMF <- DESeq(dds)

> gt10<- function(x){
+ sum(x) > 10;
+ }

> resultsNames(ddsMF)

> plotMA(ddsMF, intgroup=c("Tissues"))

> res <- results(ddsMF)

> write.table(res,"DESeq2_t2_allresults.txt",sep="\t");

```

DESeq2 detected and corrected dispersion estimates that were too low through modelling of the dependence of the dispersion on the average expression strength over all samples (Love *et al.*, 2014). After *DESeq2* analysis completed, differentially expressed genes were obtained by sorting them in ascending order according to their adjusted P -values ($P_{adj} < 0.1$).

Differentially expressed genes in all tissues were recorded in an Excel sheet. Among those genes, tissue-specific genes, which were identified differentially expressed in only one tissue, were identified.

3.7. ANNOTATION

Genes were defined with their Ensembl identifiers instead of common names in the results of the expression analyses. UniProt (<http://uniprot.org>) (UniProt Consortium, 2011) was used to convert the list of Ensembl IDs to common gene names. After going to the internet address of UniProt, retrieve/ID mapping link was clicked (see Figure 6). The files containing identifiers were uploaded and submitted. The identifiers could also be pasted on the blank page. The results took a while due to the big size of the files, but they were shown in a table of annotations for gene IDs.

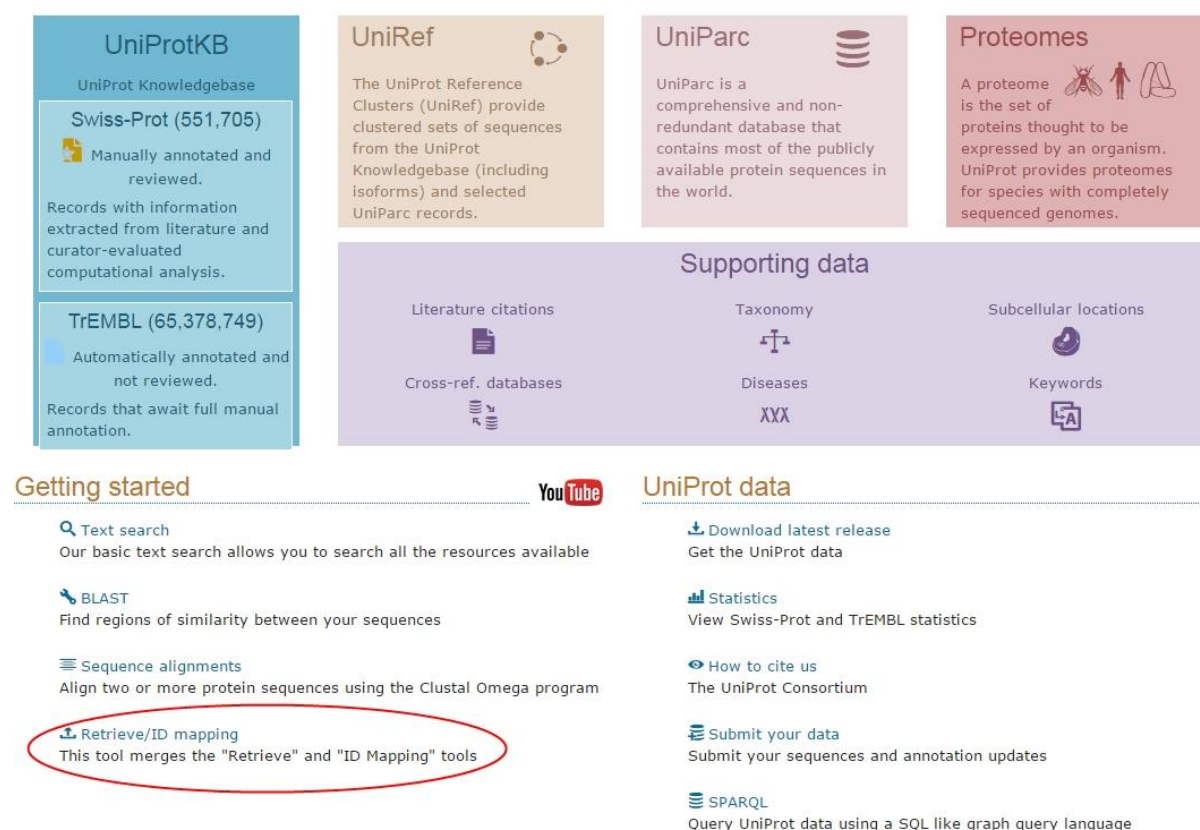


Figure 6. Screenshot of the UniProt homepage. Retrieve/ID mapping link, found on the left bottom, should be clicked for ID conversion.

PANTHER (Protein Analysis THrough Evolutionary Relationships, Mi *et al.*, 2013) was used to categorize tissue-specific genes according to molecular function, cellular component, and biological process. PANTHER uses the Gene Ontology Consortium (Ashburner *et al.*, 2000) classification system. Hence, the Gene Ontology enrichment page (<http://geneontology.org>) was used to as part of this process. Pasting the genes and selecting

Bos taurus at species section in Gene Ontology website, analyses were made separately for biological process, molecular function and cellular components.

The screenshot displays the STRING database homepage. On the left, a sidebar contains navigation links: 'Protein by name', 'Protein by sequence', 'Multiple proteins' (highlighted in blue), 'Multiple sequences', 'Organisms', 'Protein families ("COGs")', 'Examples', and 'Random entry'. The main area is titled 'SEARCH' and 'Multiple Proteins by Names / Identifiers'. It features a 'List Of Names:' input field with a text area containing six Ensembl IDs for *Bos taurus*: ENSBTAG00000015350, ENSBTAG00000046753, ENSBTAG00000009008, ENSBTAG00000030973, ENSBTAG00000001333, and ENSBTAG00000017946. Below this is a file upload option with a 'Browse ...' button. An 'Organism:' dropdown menu is set to 'auto-detect'. A large blue 'SEARCH' button is at the bottom.

Figure 7. Screenshot of STRING database homepage. Multiple proteins section was selected to discover interactions between the tissue-specific genes.

The predicted protein-protein interactions of tissue-specific genes were analysed using version 10.0 of the STRING database (Szkarczyk *et al.*, 2014). After going to the internet address of STRING database (<http://string-db.org/>), and selecting the “multiple proteins” section the Ensembl IDs of the genes found to be specific to individual tissues were pasted and the organism was defined in search panel (see Figure 7).

3.8. SNP ANALYSIS

The database of single nucleotide polymorphisms (dbSNP) (Sherry *et al.*, 2001) was used to find previously identified missense, nonsense and coding synonymous SNPs in a selection of the tissue-specific expressed genes. The genes checked for SNPs, were chosen according to their tissue-specific biological processes and their high amount of protein-protein interactions found in STRING database. On the internet page of dbSNP in NCBI (<http://www.ncbi.nlm.nih.gov/snp>), the gene names were typed singly (see Figure 8). On the left toolbar; *Bos taurus*, snp and nonsense/missense/coding synonymous were selected for the sections of the organism, variation and function classes, respectively.

NCBI Resources How To

dbSNP SNP PHLPP2 Save search Advanced

Organism clear Display Settings: Summary, Sorted by SNP_ID

✓ Bos taurus Customze ...

Variation Class clear

✓ snp

Annotation nucleotide protein

Function Class clear

✓ nonsense stop gained

Global MAF Custom range...

Validation Status no-info

Clear all Show additional filters

Results: 2

Filters activated: Bos taurus, snp, nonsense. Clear all to show 13501 items.

☐ rs438189444 [Bos taurus]

1. CGACCTCTCGTGTACAGCCTTGAG[G/T]AGGTTCTGAGCATCTCTTCTACAG

Chromosome: 18:39525679

Gene: PHLPP2 (GeneView)

Functional Consequence: stop gained

Validated: no info

[Protein3D](#)

☐ rs476587190 [Bos taurus]

2. CCCGGAGGAGTTTGACACGGCACTG[G/T]AGTCTTCCCCAGGGGCCATGGCAT

Chromosome: 18:39551288

Gene: PHLPP2 (GeneView)

Functional Consequence: stop lost

Validated: no info

Figure 8. Screenshot of database of single nucleotide polymorphisms (dbSNP). The function class of SNPs for some tissue-specific genes were found by using dbSNP.

4. RESULTS

4.1. QUALITY CONTROL

The results of quality control analysis revealed that most of the sequence was of good quality (See Table 2) and required no trimming. However, there were samples which started with high quality but got worse towards the end of the sequence (See figures 9 to 15). The low-quality base positions of L1, L4, L6, M4, M6, E6, A3, B1, B3 and B7 labelled samples were trimmed accordingly. The reads were trimmed by a fixed number of bases determined individually for each dataset as necessary (Table 2). Quality scores across bases of single-end samples; A3, B1, and L4 were shown as before and after trimming in Figure 9, Figure 10 and Figure 14, respectively. Quality scores across bases of paired-end samples; B3, E6, L1, and M4, are shown as before and after trimming in Figure 11, Figure 12, Figure 13 and Figure 15, respectively. %GC content of L1, M4, M6, B1 and B3 remained stable. %GC content of L4 increased from 41% to 45%, while L6, E6, A3 and B7 showed decreases following trimming.

Table 2. General statistics of the data after quality control.

Label	Sequence Length	GC Content	Total Number of Sequences	Trimming	Sequence Length after trimming	GC Content after trimming
L1	100	48.00%	18,497,536	Trimmed	95	48.00%
L2	101	50.00%	20,076,920	No Trimming	-	-
L3	36	56.00%	14,072,947	No Trimming	-	-
L4	49	41.00%	37,834,521	Trimmed	30	45.00%
L5	16	42.00%	3,183,675	No Trimming	-	-
L6	16	44.00%	3,630,924	Trimmed	12	43.00%
M1	40	56.00%	39,415,231	No Trimming	-	-
M2	49	49.00%	25,165,811	No Trimming	-	-
M3	100	51.00%	26,531,054	No Trimming	-	-
M4	101	47.00%	19,207,629	Trimmed	95	47.00%
M5	101	47.00%	19,064,029	No Trimming	-	-
M6	49	50.00%	9,745,935	Trimmed	44	50.00%
M7	101	49.00%	20,514,168	No Trimming	-	-
M8	49	53.00%	33,371,704	No Trimming	-	-
E1	80	45.00%	43,494,205	No Trimming	-	-
E2	49	50.00%	28,951,871	No Trimming	-	-
E3	51	45.00%	29,872,890	No Trimming	-	-
E4	75	50.00%	17,048,350	No Trimming	-	-
E5	100	49.00%	20,764,347	No Trimming	-	-
E6	40	51.00%	14,510,855	Trimmed	32	50.00%
A1	101	47.00%	22,773,893	No Trimming	-	-
A2	101	49.00%	19,478,509	No Trimming	-	-
A3	100	50.00%	20,119,552	Trimmed	80	49.00%
A4	101	49.00%	15,646,720	No Trimming	-	-
A5	16	49.00%	3,626,532	No Trimming	-	-
A6	49	36.00%	13,641,806	No Trimming	-	-
B1	100	48.00%	39,114,786	Trimmed	95	48.00%
B2	36	50.00%	27,865,501	No Trimming	-	-
B3	80	53.00%	24,143,872	Trimmed	75	53.00%
B4	42	49.00%	26,518,662	No Trimming	-	-
B5	100	47.00%	22,833,333	No Trimming	-	-
B6	101	48.00%	20,322,303	No Trimming	-	-
B7	16	42.00%	2,914,418	Trimmed	13	41.00%

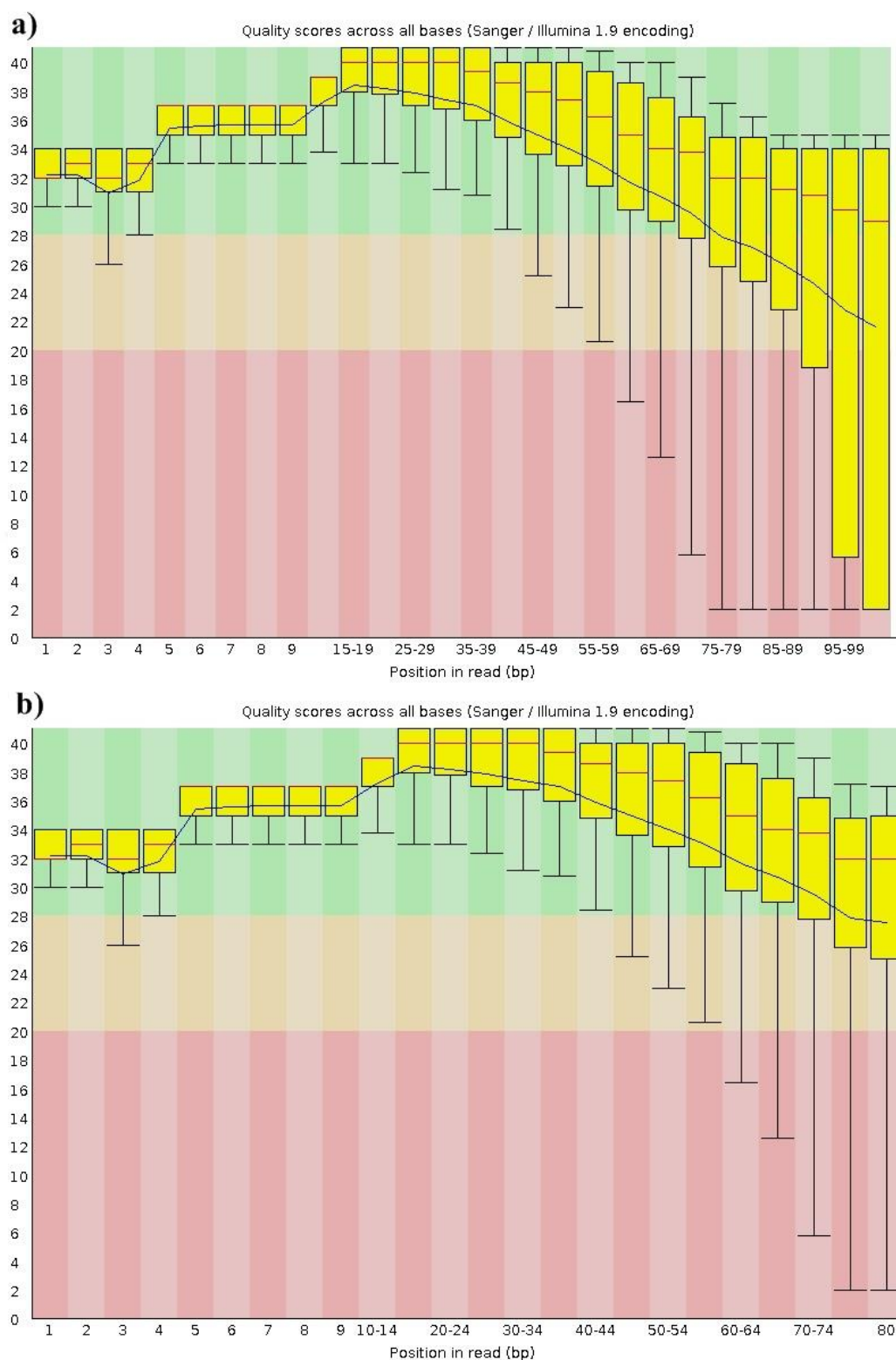


Figure 9. Overview of the range of quality values across all bases in the *FastQ* file of A3 before and after trimming. (a) Per base sequence quality of raw data. (b) Per base sequence quality of trimmed data. The continuous blue line indicates the mean quality.

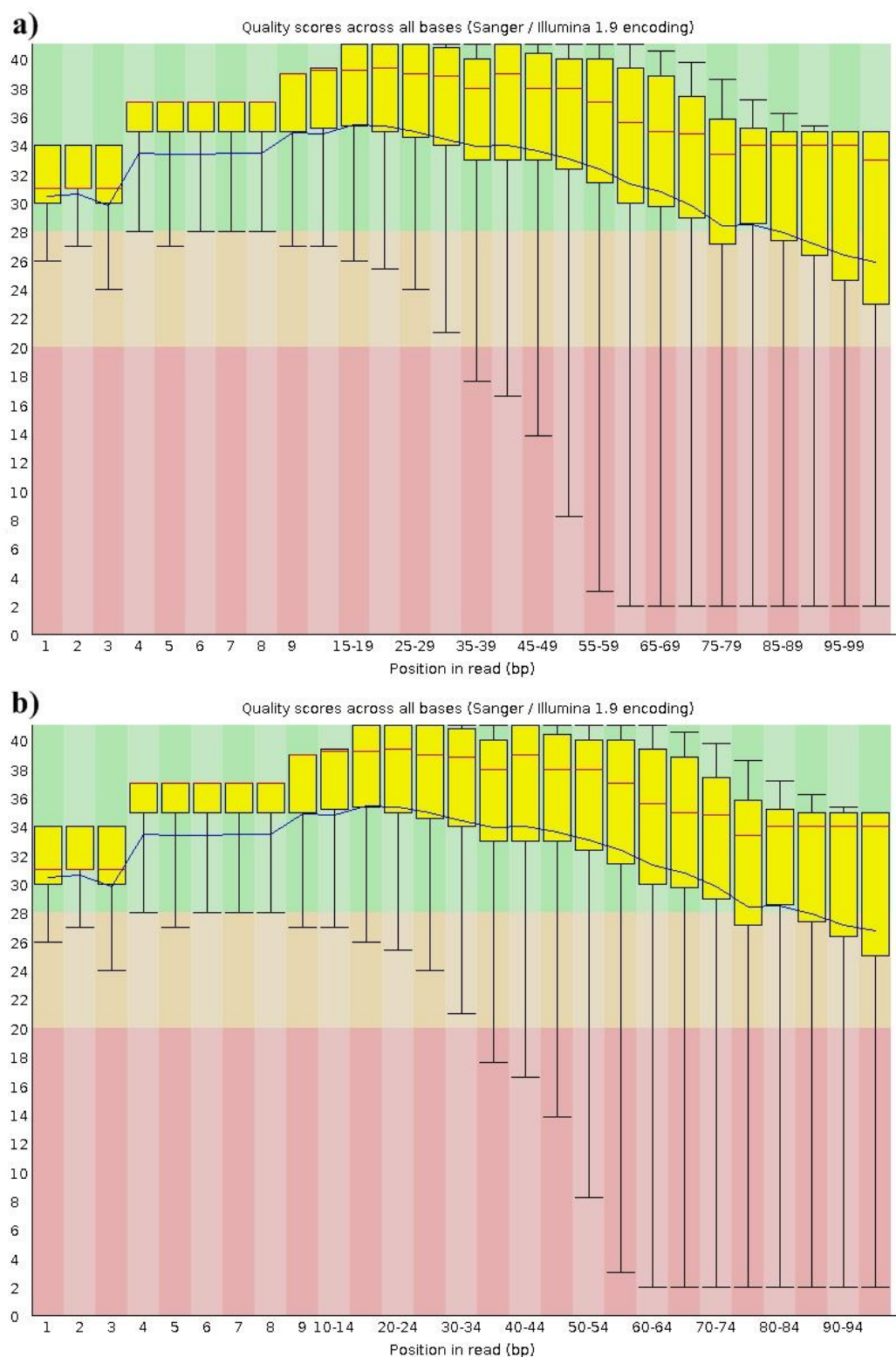


Figure 10. Overview of the range of quality values across all bases in the *FastQ* file of B1 before and after trimming. (a) Per base sequence quality of raw data. (b) Per base sequence quality of trimmed data. The continuous blue line indicates the mean quality.

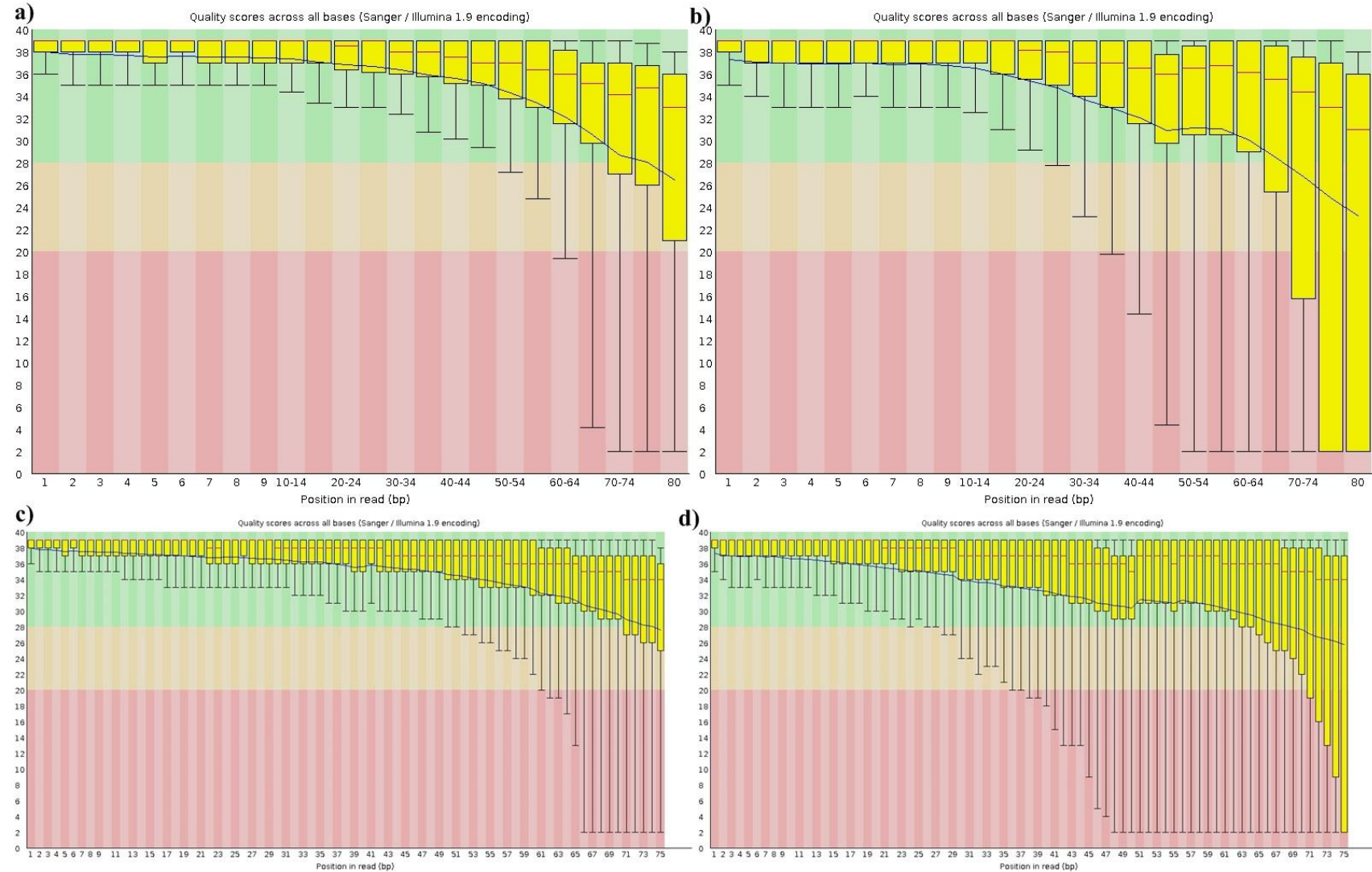


Figure 11. Overview of the range of quality values across all bases in the *FastQ* file of B3 before and after trimming. (a) Per base sequence quality of first and (b) second of the pair. (c) Per base sequence quality of trimmed first d) second of the pair. The continuous blue line indicates the mean quality.

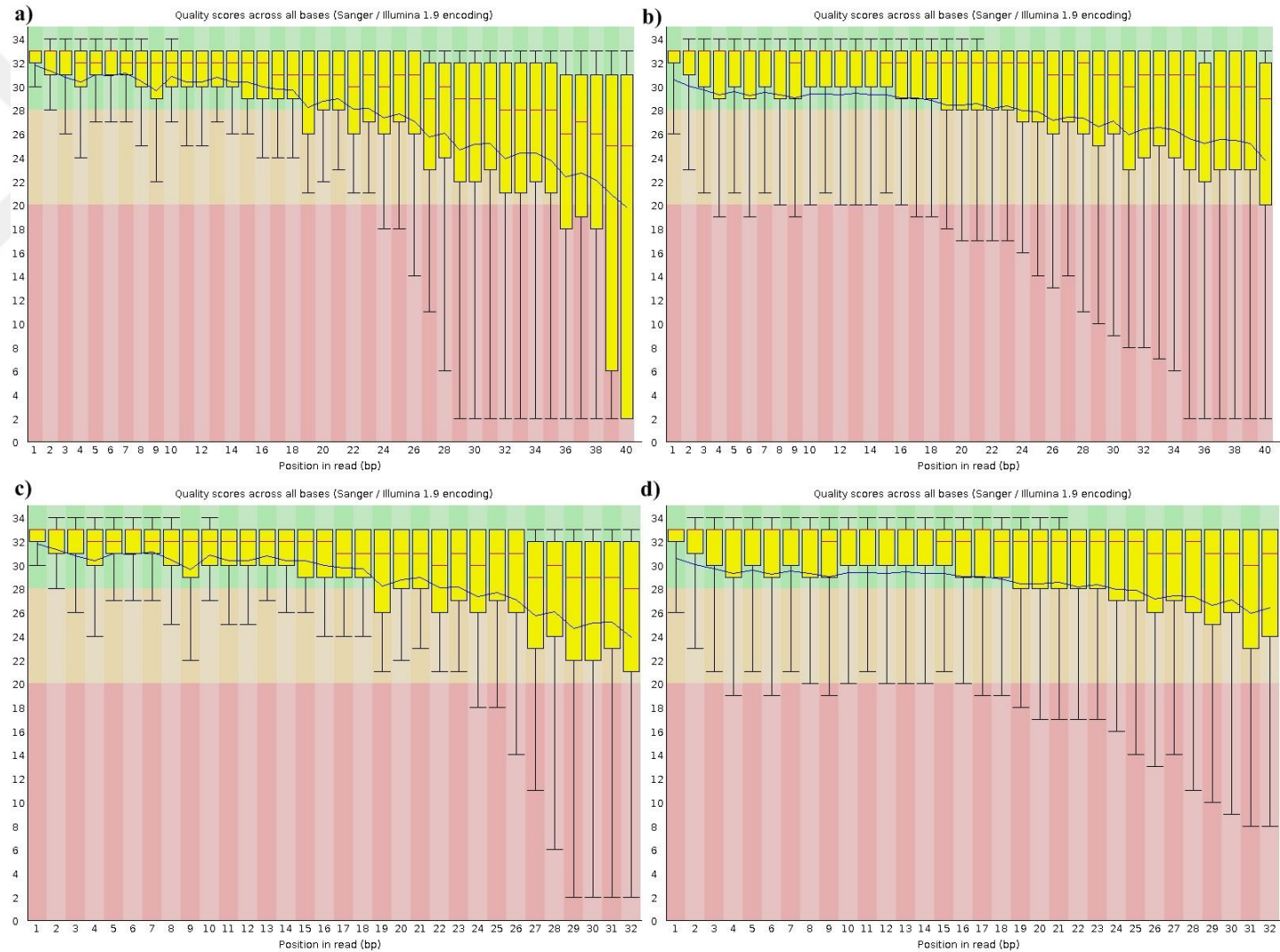


Figure 12. Overview of the range of quality values across all bases in the *FastQ* file of E6 before and after trimming. (a) Per base sequence quality of first and (b) second of the pair. (c) Per base sequence quality of trimmed first d) second of the pair. The continuous blue line indicates the mean quality.

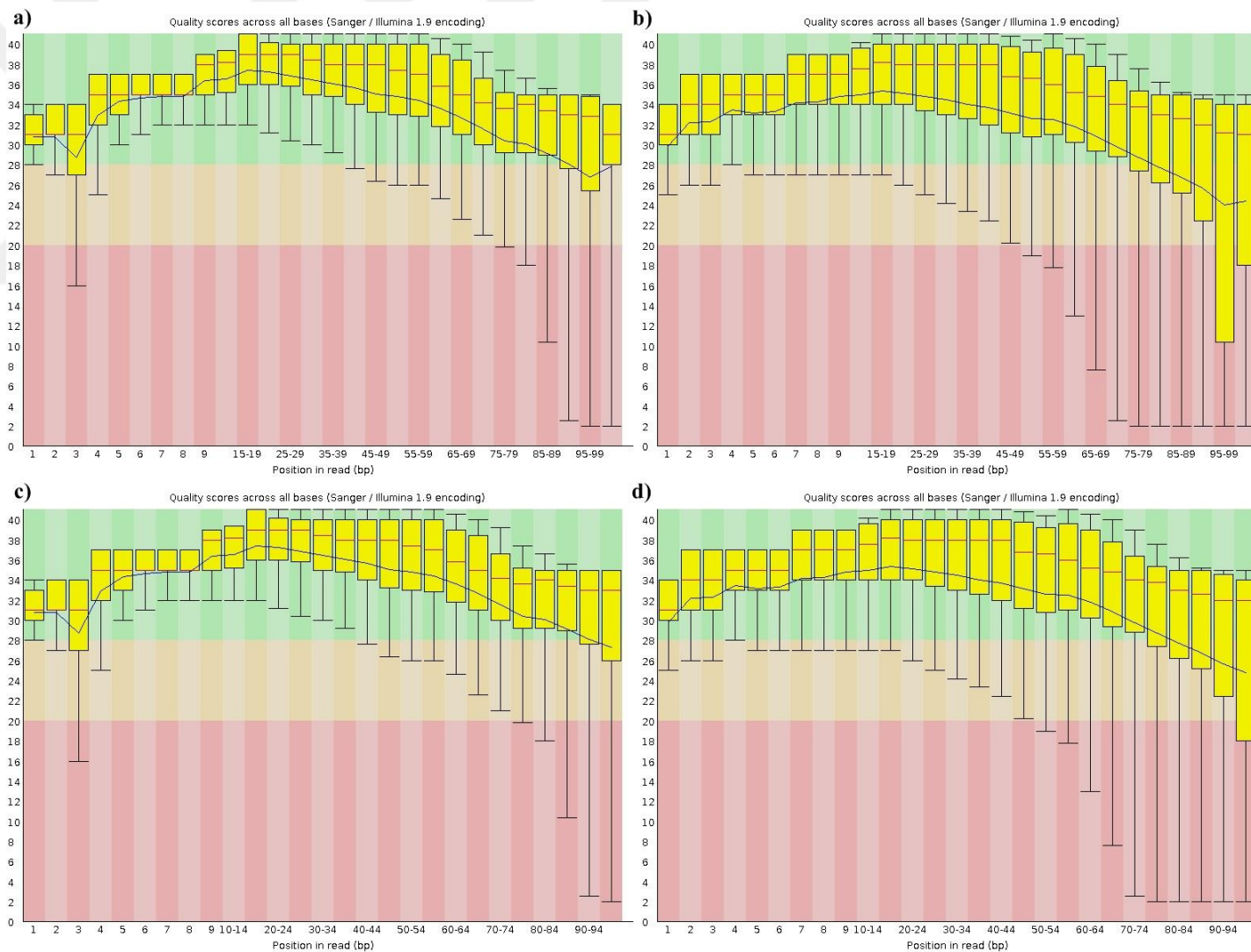


Figure 13. Overview of the range of quality values across all bases in the *FastQ* file of L1 before and after trimming. (a) Per base sequence quality of first and (b) second of the pair. (c) Per base sequence quality of trimmed first d) second of the pair. The continuous blue line indicates the mean quality.

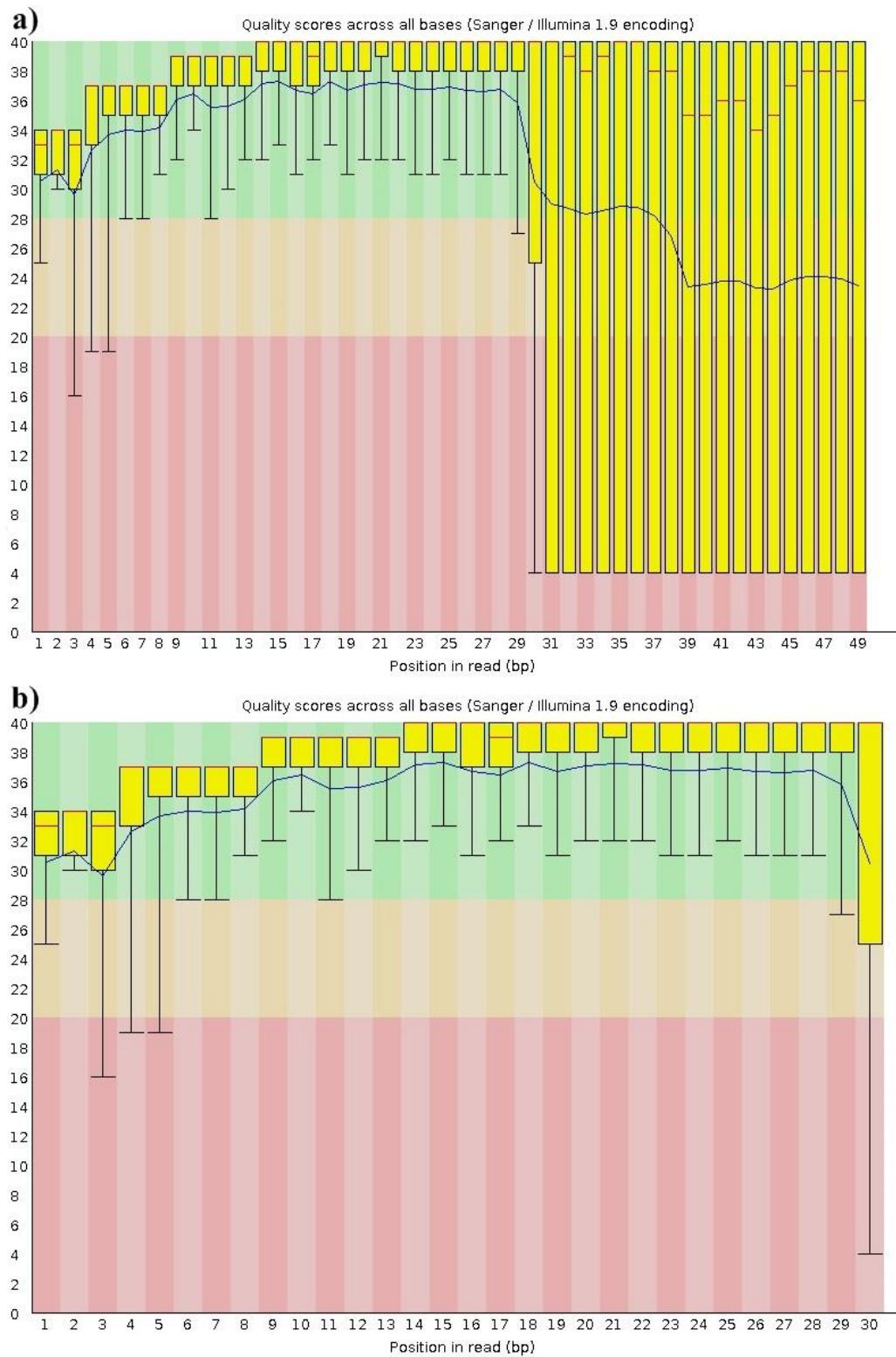


Figure 14. Overview of the range of quality values across all bases in the *FastQ* file of L4 before and after trimming. (a) Per base sequence quality of raw data. (b) Per base sequence quality of trimmed data. The continuous blue line indicates the mean quality.

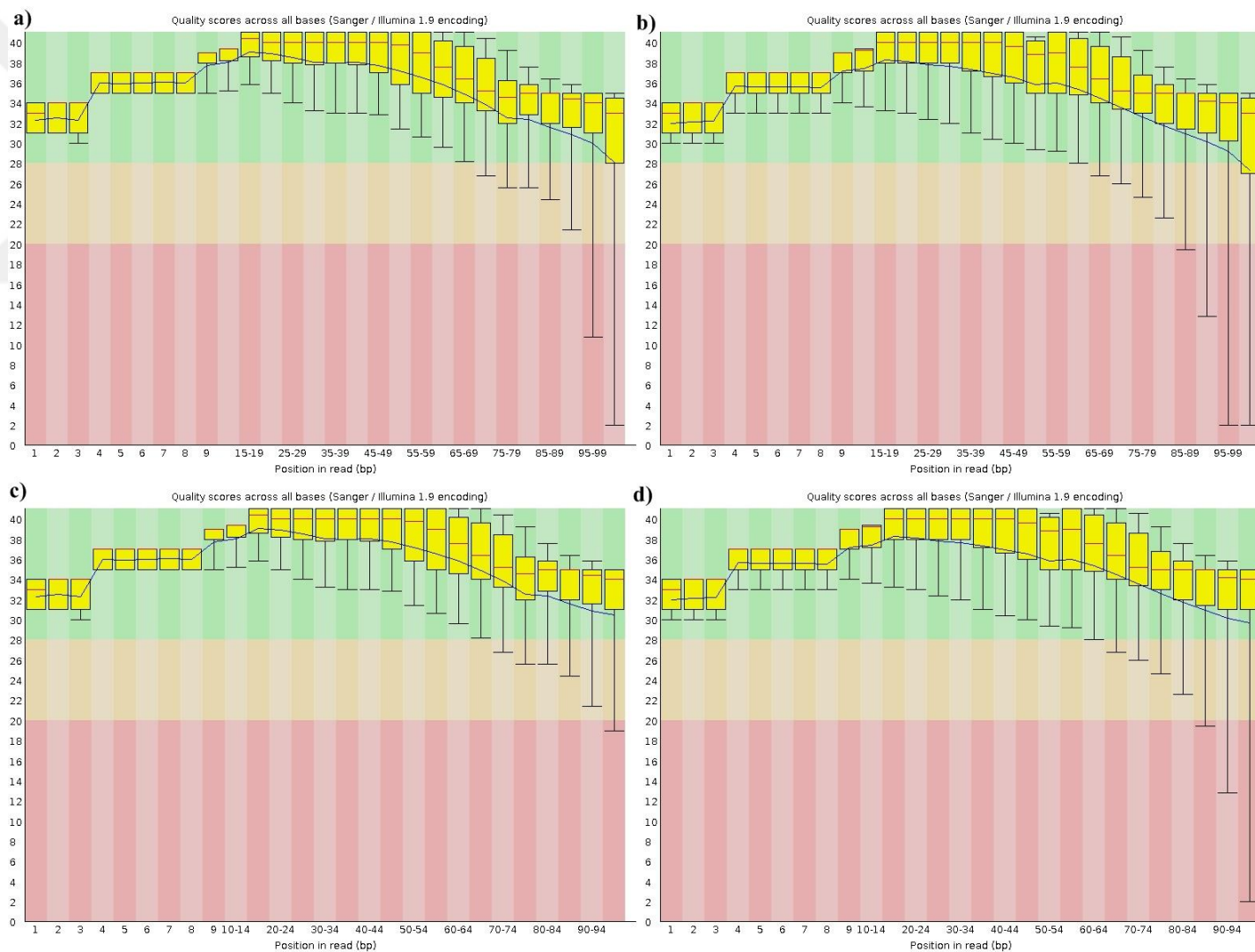


Figure 15. Overview of the range of quality values across all bases in the *FastQ* file of M4 before and after trimming. (a) Per base sequence quality of first and (b) second of the pair. (c) Per base sequence quality of trimmed first d) second of the pair. The continuous blue line indicates the mean quality.

4.2. QUANTIFICATION

The results of quantification analyses, *MarkDuplicates* and *FeatureCounts*, can be seen in Figure 16. Using *MarkDuplicates*, the duplicate molecules of the datasets were flagged. The duplicate proportion of L4 was the highest (98.02%), while M8 was the lowest (6.79%) (see Figure 16). Excluding these extreme values, the average duplicate percentage of the datasets was 43.13% (Table 3).

Using *FeatureCounts*, total counts of expressed genes in all samples were calculated (Table 3). Outliers in tissue-specific samples were found according to modified Thompson Tau technique (Olewuezi *et al.*, 2015) relying on the standard deviation of these samples. There were no outliers found in liver and endometrium. However, M8, A6, and B7 were the outliers in muscle, adipose and brain tissues, respectively. After removing these outliers in these tissue samples, the average of the read summarization was 66%, 55% and 52% for muscle, adipose and brain samples, respectively. The average percentage of the reads that mapped to features was 40% for liver and 54% for endometrium. Overall, the highest mapping rate to known features on the bovine genome was L1 (74.87%), and the lowest was L4 (3.00%). Although L4 had such a low percentage of read summarization, the amount of mapped reads were enough for further analysis (see Table 3). The mapped reads of M8, L6, A6, and B7 samples were found in negligible amounts (amount of expression < 1 million) (Figure 17). Hence, these samples were removed from datasets to prevent from misleading before further analyses.

Table 3. Summary of the quantified data.

Label	Sequence Length	GC Content	Total Number of Sequences	MarkDuplicate Percentage	FeatureCounts	FeatureCount Percentage
L1	100	48.00%	18,497,536	35.55%	13,849,624	74.87%
L2	101	50.00%	20,076,920	28.52%	12,316,165	61.34%
L3	36	56.00%	14,072,947	58.25%	8,739,506	62.10%
L4	49	41.00%	37,834,521	98.02%	1,136,234	3.00%
L5	16	42.00%	3,183,675	85.40%	1,091,668	34.29%
L6	16	44.00%	3,630,924	57.80%	127,378	3.51%
M1	40	56.00%	39,415,231	61.23%	24,713,950	62.70%
M2	49	49.00%	25,165,811	71.91%	17,110,832	67.99%
M3	100	51.00%	26,531,054	61.03%	14,838,542	55.93%
M4	101	47.00%	19,207,629	36.91%	13,537,771	70.48%
M5	101	47.00%	19,064,029	47.43%	13,324,296	69.89%
M6	49	50.00%	9,745,935	64.88%	6,479,959	66.49%
M7	101	49.00%	20,514,168	41.22%	14,660,167	71.46%
M8	49	53.00%	33,371,704	6.79%	890,238	2.67%
E1	80	45.00%	43,494,205	53.65%	20,880,652	48.01%
E2	49	50.00%	28,951,871	23.35%	19,357,802	66.86%
E3	51	45.00%	29,872,890	15.59%	16,501,483	55.24%
E4	75	50.00%	17,048,350	24.35%	10,412,000	61.07%
E5	100	49.00%	20,764,347	41.87%	9,778,684	47.09%
E6	40	51.00%	14,510,855	23.20%	6,526,926	44.98%
A1	101	47.00%	22,773,893	28.44%	14,983,119	65.79%
A2	101	49.00%	19,478,509	22.21%	12,326,329	63.28%
A3	100	50.00%	20,119,552	41.72%	10,668,266	53.02%
A4	101	49.00%	15,646,720	19.56%	9,290,136	59.37%
A5	16	49.00%	3,626,532	85.87%	1,179,183	32.52%
A6	49	36.00%	13,641,806	47.42%	355	0.00%
B1	100	48.00%	39,114,786	61.13%	19,308,832	49.36%
B2	36	50.00%	27,865,501	64.38%	14,831,920	53.23%
B3	80	53.00%	24,143,872	24.24%	13,855,882	57.39%
B4	42	49.00%	26,518,662	42.94%	13,227,531	49.88%
B5	100	47.00%	22,833,333	42.64%	11,065,363	48.46%
B6	101	48.00%	20,322,303	19.27%	10,579,652	52.06%
B7	16	42.00%	2,914,418	48.12%	135,131	4.64%

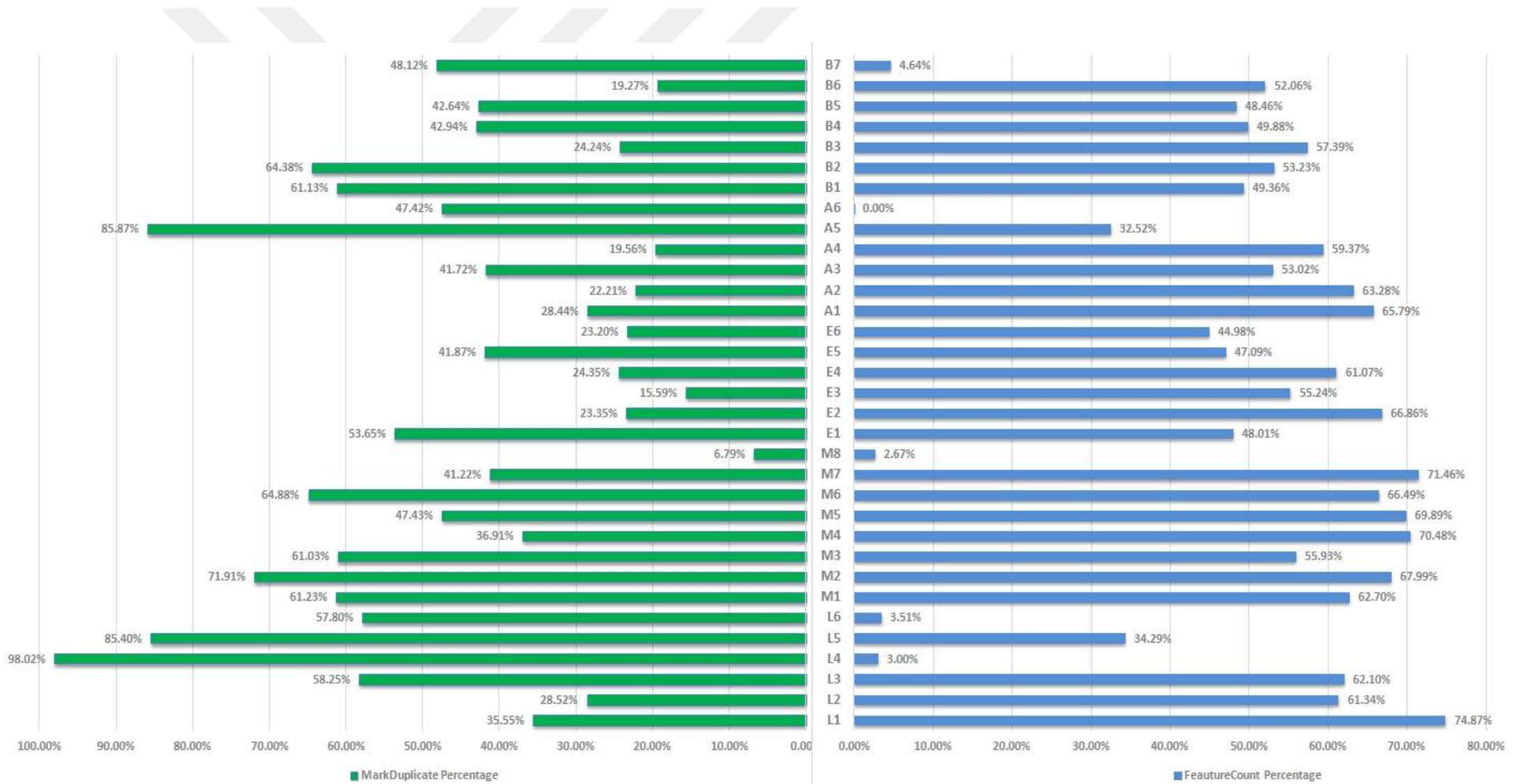


Figure 16. The results of quantification analyses in percentage. The percentage of duplicates (on the left, green labelled) and the percentage of reads mapping to features (on the right, blue labelled) are shown.

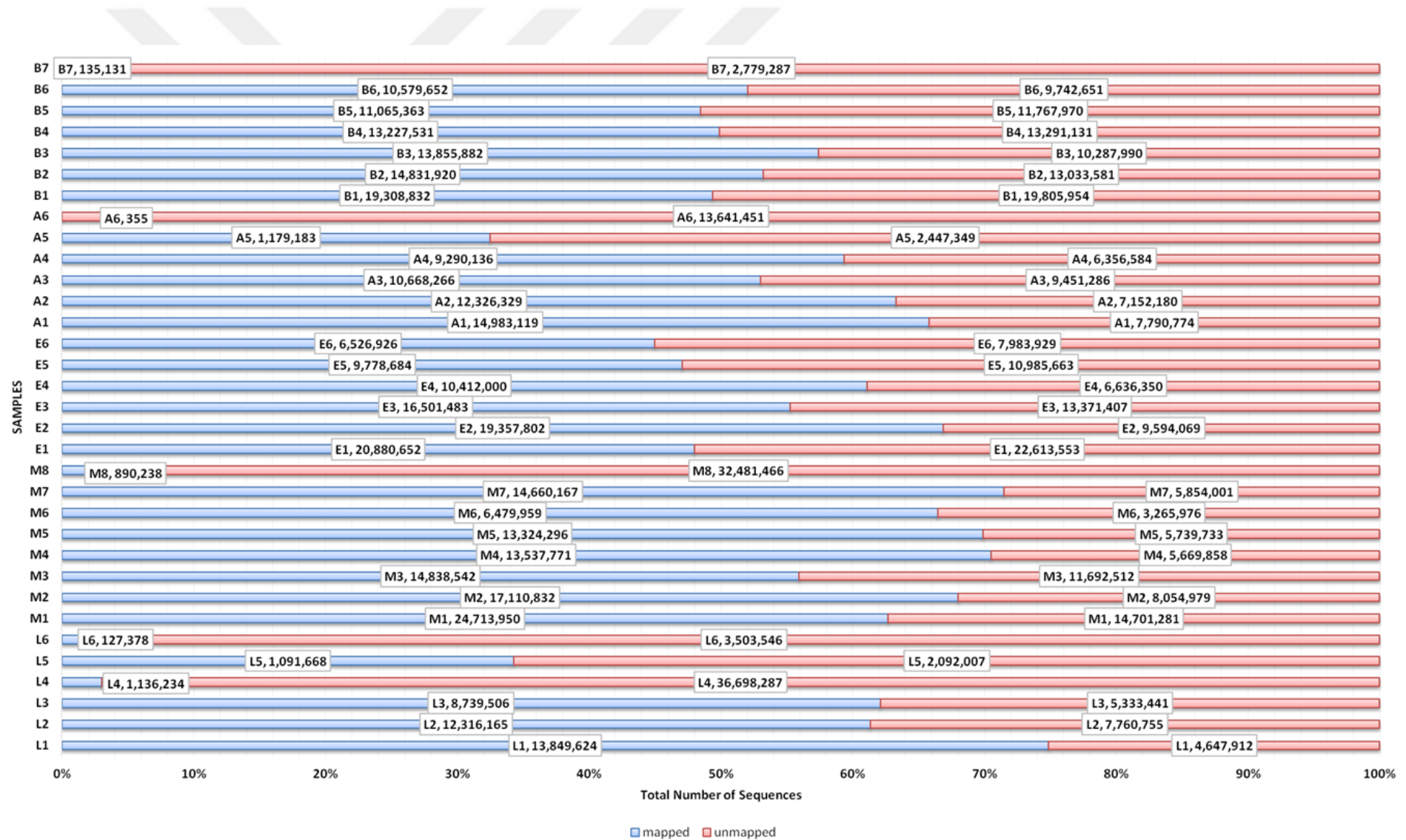


Figure 17. Total counts of expressed genes in each sample. The figure demonstrates the percentage of mapped (blue) and unmapped (red) read sequences of each sample. The mapped reads were found by using *FeatureCounts*. L6, M8, A6 and B7 were found quite shorts (<1 million reads).

4.3. METRIC MULTIDIMENSIONAL SCALING (MDS)

The scaled counts of reads mapping to genes for all samples were plotted using metric MDS to examine the trends in the data. This identified samples L4, L5, B5 and B6 not clustering with the rest of the samples from their respective tissues (Figure 18). The reason for deviation in L4 and L5 may be due to their low number of expressed genes. Further investigation of B5 and B6 identified that they were taken from pituitary gland, as opposed to general brain tissue for the other samples and likely causes these sequences to act as outliers. After removing the outliers, the remaining sequence samples were plotted onto coordinate 1 against 2 (Figure 19) and coordinate 1 against 3 which aimed to define possible clusters (Figure 20).

It was clear that muscle and liver tissue sequences clustered within their tissue (see Figure 19&Figure 20). However, samples from adipose, brain, and endometrium tissues did not differentiate within tissues. Using metric MDS, only these three tissues (adipose, brain, and endometrium) were plotted onto coordinate 1 against 2 (Figure 21) and coordinate 1 against 3 which aimed to define possible clusters (Figure 22). Brain samples were shown to be clustered in both of the MDS, while endometrium was observed in the MDS of coordinate 1 against 3 (see Figure 21&Figure 22).

The results provided the necessary confidence that a tissue-specific gene expression signal existed and that made sense to continue to the next step of identifying the genes that characterized these differences.

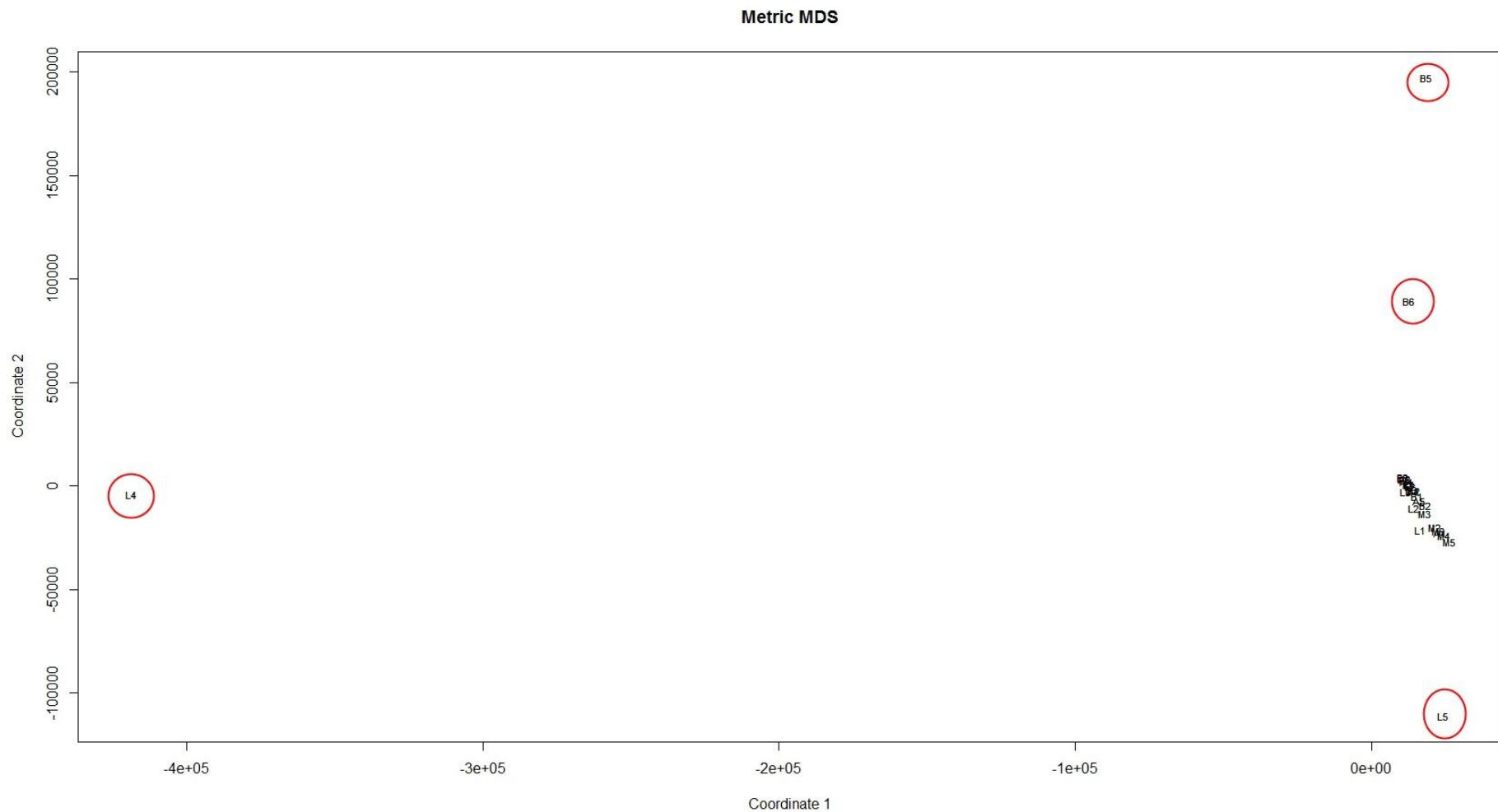


Figure 18. Metric Multidimensional Scaling (MDS) plot of all tissue samples on coordinate 1 and 2. A1, A2, A3, A4, A5 from adipose, B1, B2, B3, B4, B5, B6 from brain, E1, E2, E3, E4, E5, E6 from endometrium, L1, L2, L3, L4, L5 from liver, M1, M2, M3, M4, M5, M6, M7 from muscle tissue generated by RNA-Seq Data.

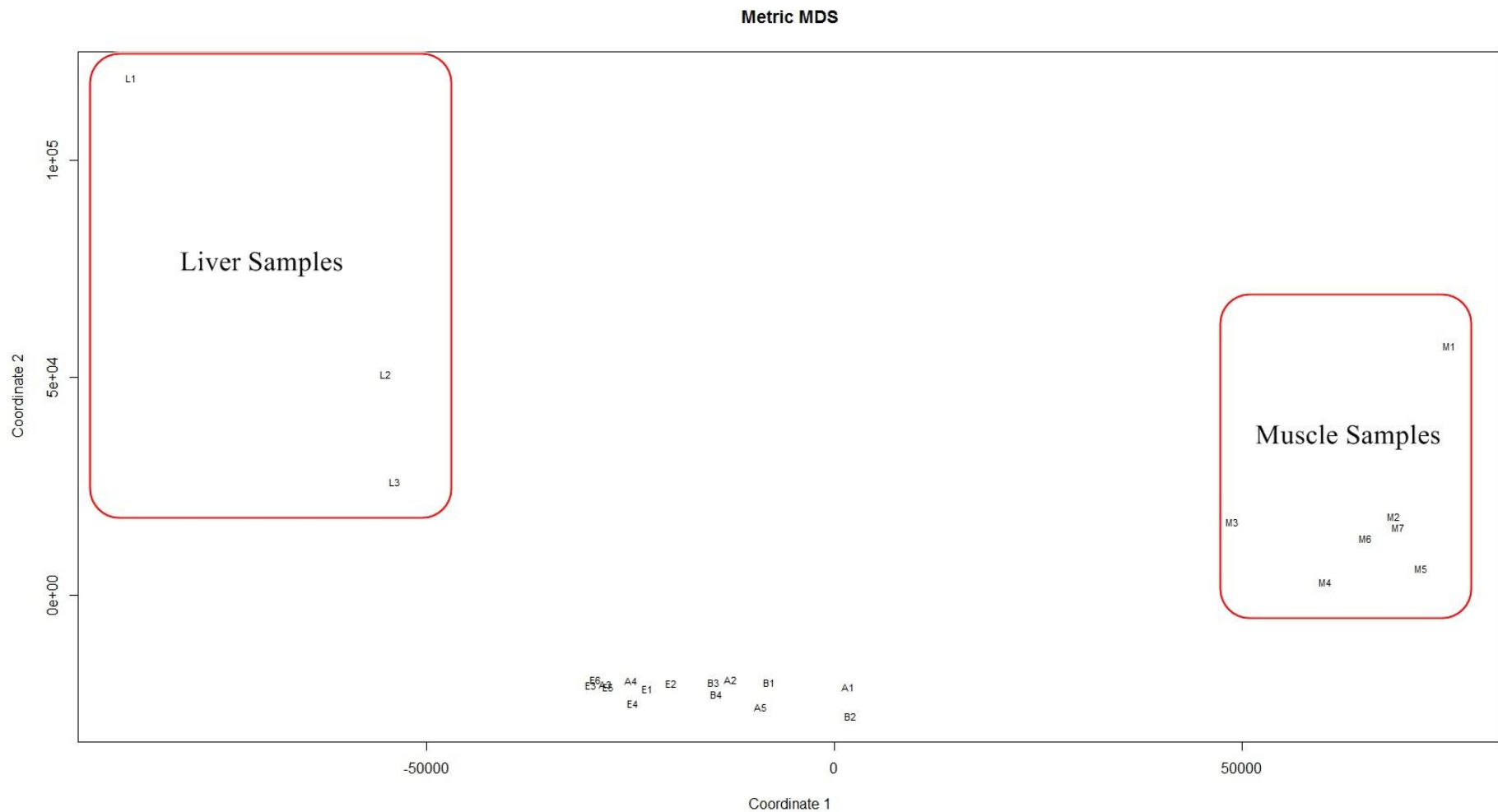


Figure 19. Metric Multidimensional Scaling (MDS) plot of remained tissue samples after removing outliers (B5, B6, L4, and L5) on coordinate 1 and 2. A1, A2, A3, A4, A5 from adipose, B1, B2, B3, B4, B5, B6 from brain, E1.E2,E3, E4, E5, E6 from endometrium, L1, L2, L3, L4, L5 from liver, M1, M2, M3, M4, M5, M6, M7 from muscle tissue generated by RNA-Seq Data.

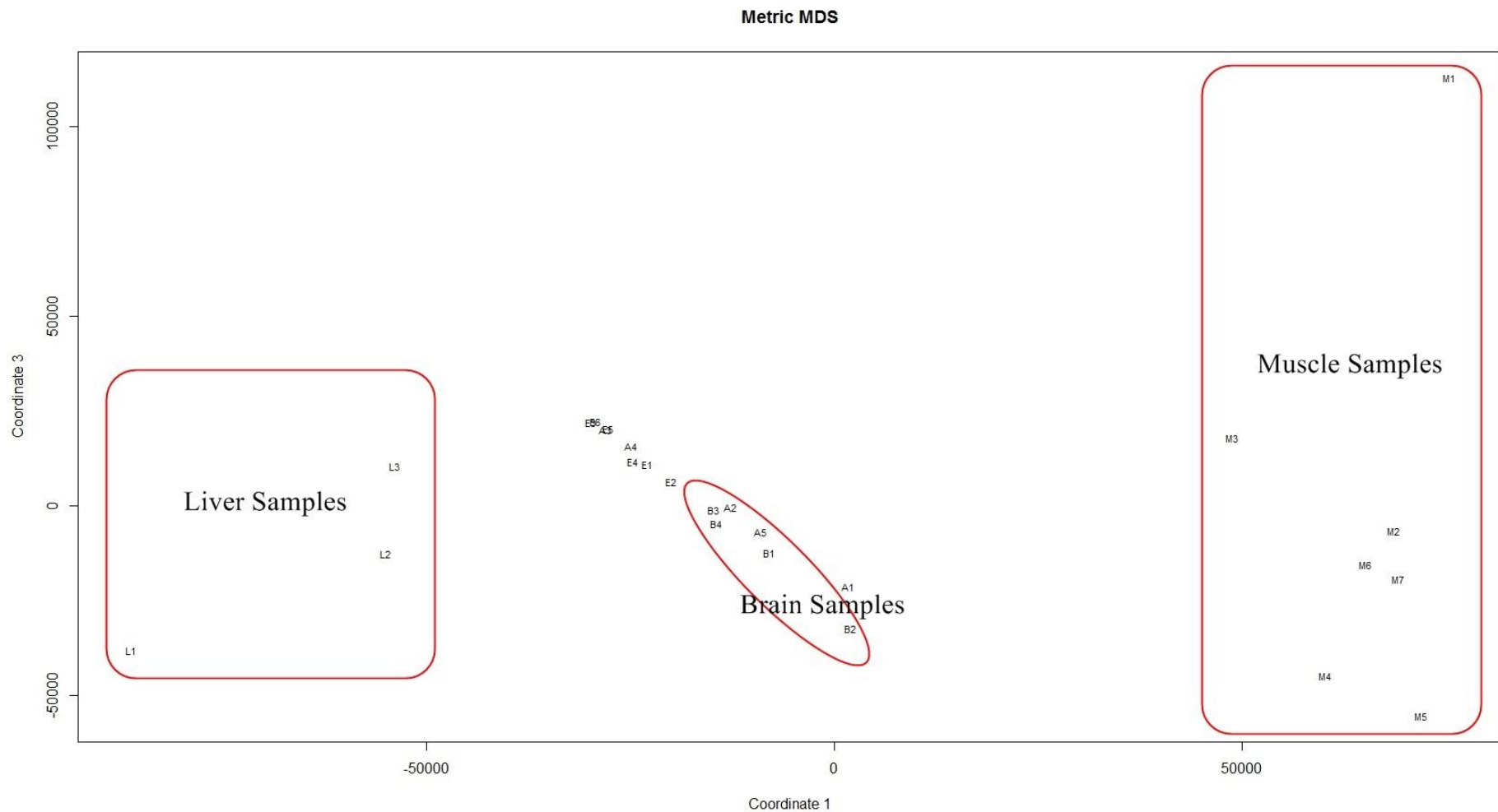


Figure 20. Metric Multidimensional Scaling (MDS) plot of remained tissue samples after removing outliers (B5, B6, L4, and L5) on coordinate 1 and 3. A1, A2, A3, A4, A5 from adipose, B1, B2, B3, B4, B5, B6 from brain, E1.E2,E3, E4, E5, E6 from endometrium, L1, L2, L3, L4, L5 from liver, M1, M2, M3, M4, M5, M6, M7 from muscle tissue generated by RNA-Seq Data.

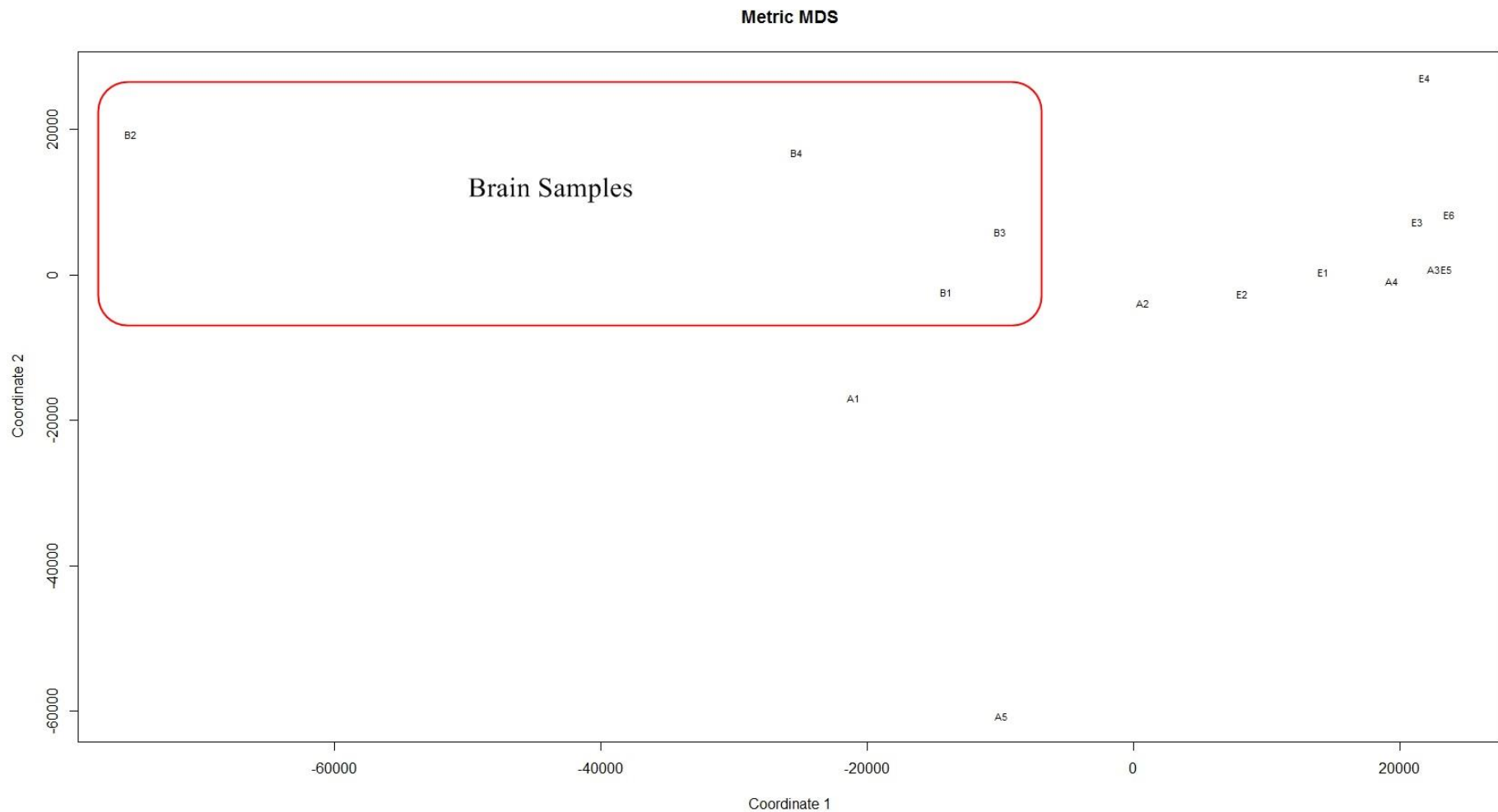


Figure 21. Metric Multidimensional Scaling (MDS) plot of adipose, brain and endometrium tissue samples on coordinate 1 and 2. A1, A2, A3, A4, A5 from adipose, B1, B2, B3, B4 from brain, E1, E2, E3, E4, E5, E6 from endometrium generated by RNA-Seq Data.

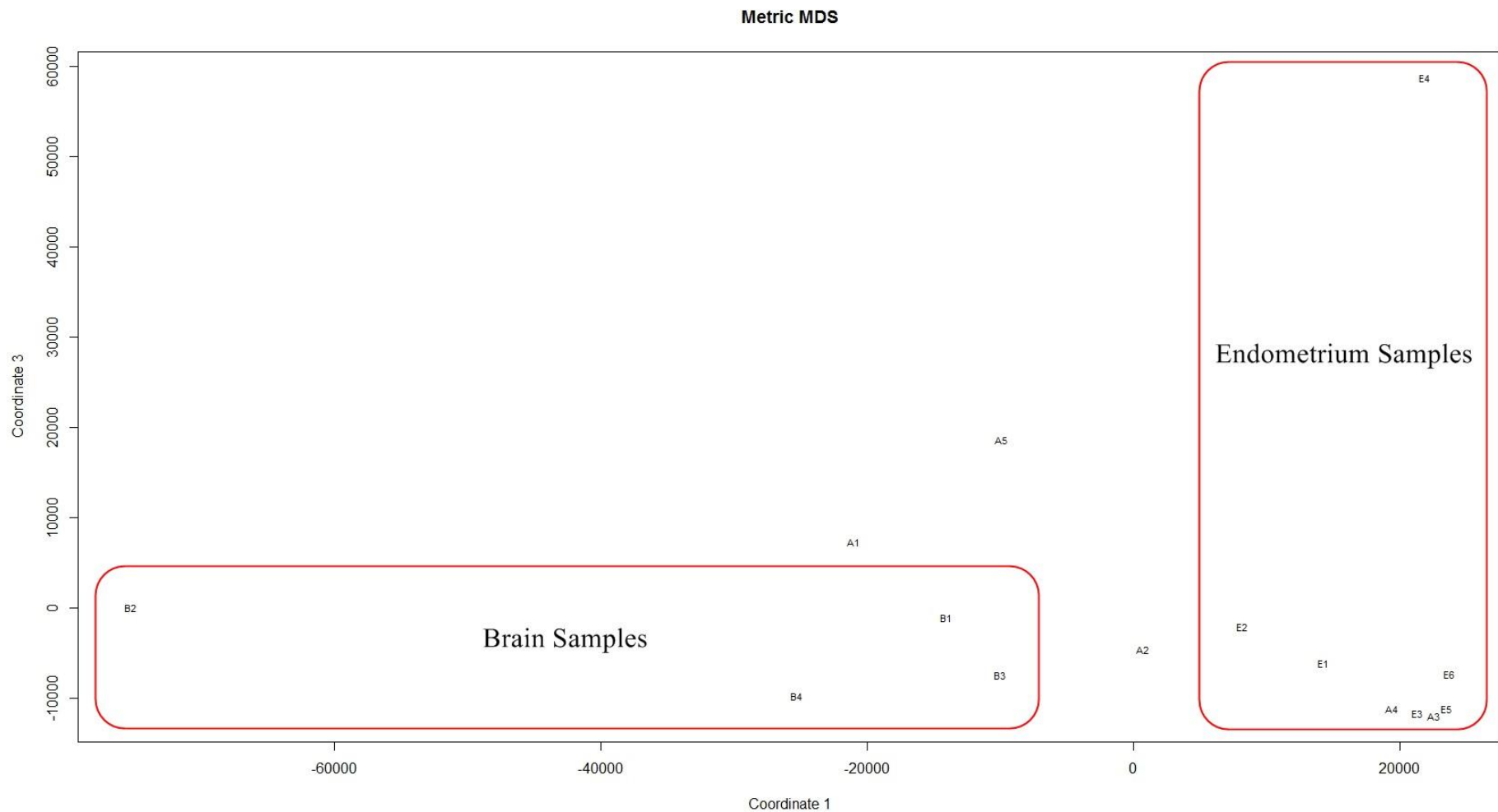


Figure 22. Metric Multidimensional Scaling (MDS) plot of adipose, brain and endometrium tissue samples on coordinate 1 and 3. A1, A2, A3, A4, A5 from adipose, B1, B2, B3, B4 from brain, E1, E2, E3, E4, E5, E6 from endometrium generated by RNA-Seq Data.

4.4. DEGs and TISSUE-SPECIFIC GENES

Using *DESeq2* (Figure 23), differentially expressed genes in tissue samples were identified in the bovine genome. According to results, 2226 DEGs were found in adipose; 4736 DEGs were found in endometrium, 5243 DEGs were found in liver; 6761 DEGs were found in brain; and 4815 DEGs were found in muscle.



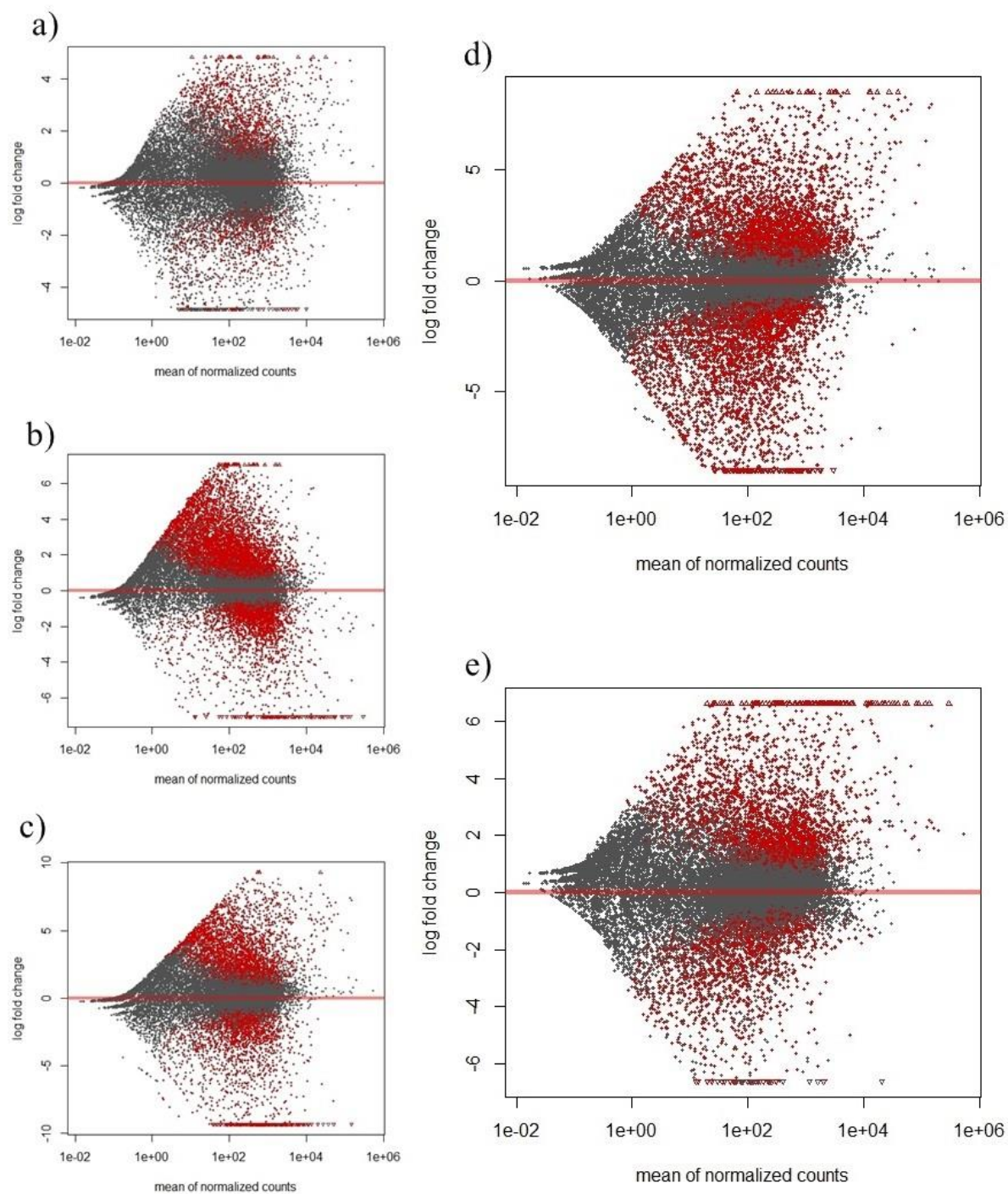


Figure 23. The plot of the differentially expressed genes (DEGs) with adjusted *P*-value < 0.1 and fold change greater than 0.5 in absolute value. DEGs in a) adipose, b) muscle, c) liver, d) brain and, e) endometrium tissues on the bovine whole genome were represented in red. X-axis values are the mean of normalized counts, and y-axis values are log fold change.

However, these DEGs did not necessarily mean they were tissue-specific genes. Some of these genes were found to be differentially expressed in more than one tissue, and sometimes in all (see Figure 24). To address this, by using Excel, the expressions of these genes were compared in all tissues and those genes that were only found to be in one tissue were identified. We found that 974 of 4815 DEGs were found muscle-specific; 344 of 2226 DEGs were found adipose-specific; 1190 of 4736 DEGs were found endometrium-specific, 1370 of 5243 genes were found liver-specific, and 2278 of 6761 DEG were found brain-specific (see Figure 24).

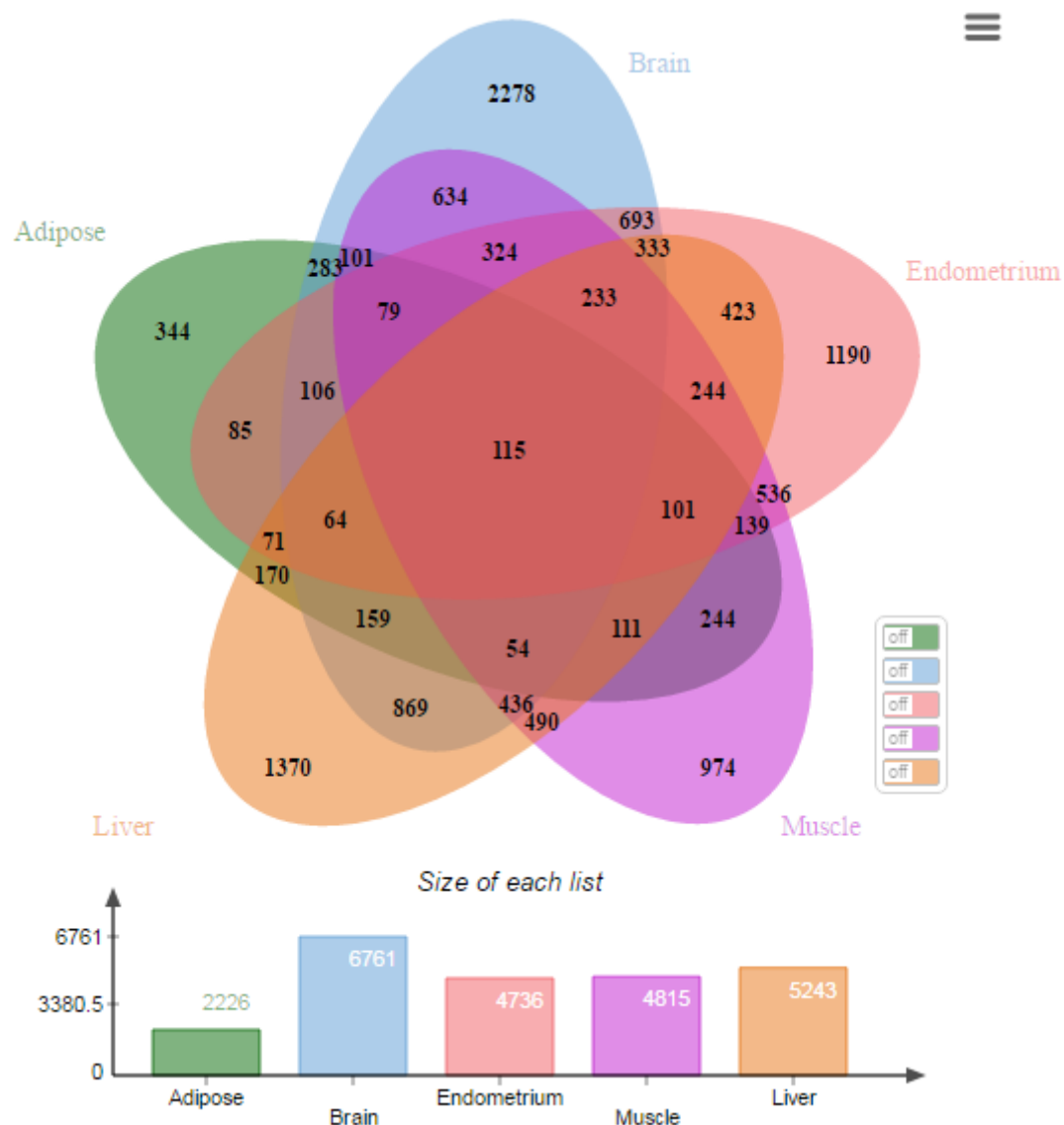


Figure 24. Venn diagram of DEGs in all tissues. Tissue-specific genes are those with no overlap such as 344 genes (adipose), 2278 genes (brain), 1190 genes (endometrium), 1370 genes (liver) and 974 genes (muscle). 115 genes were found differentially expressed in all tissues.

4.5. ANNOTATION

4.5.1. Molecular Functions of Tissue-Specific Genes

Tissue-specific genes, for each single tissue, were clustered according to molecular functions in which they are involved at different percentages, such as translation regulator activity, binding, receptor activity, structural molecule activity, signal transducer activity, catalytic activity, antioxidant activity, and transporter activity. Brain, endometrium, and liver-specific genes were involved in all these groups. However, adipose-specific genes were not observed in antioxidant, translation regulator, and channel regulator activities while muscle-specific genes did not involve in channel regulator activity (Figure 25).

In molecular functions, more than 70% of tissue-specific genes in all tissue samples were shown to be involved in binding or catalytic activity. In GEO terms, catalytic refers to the enzymatic activity of proteins which takes place in biological reactions. Binding activity contains subunits such as protein, lipid, nucleic acid, nucleotide, chromatin, antigen, calcium ion and calcium-dependent phospholipids binding (Barrett *et al.*, 2009).

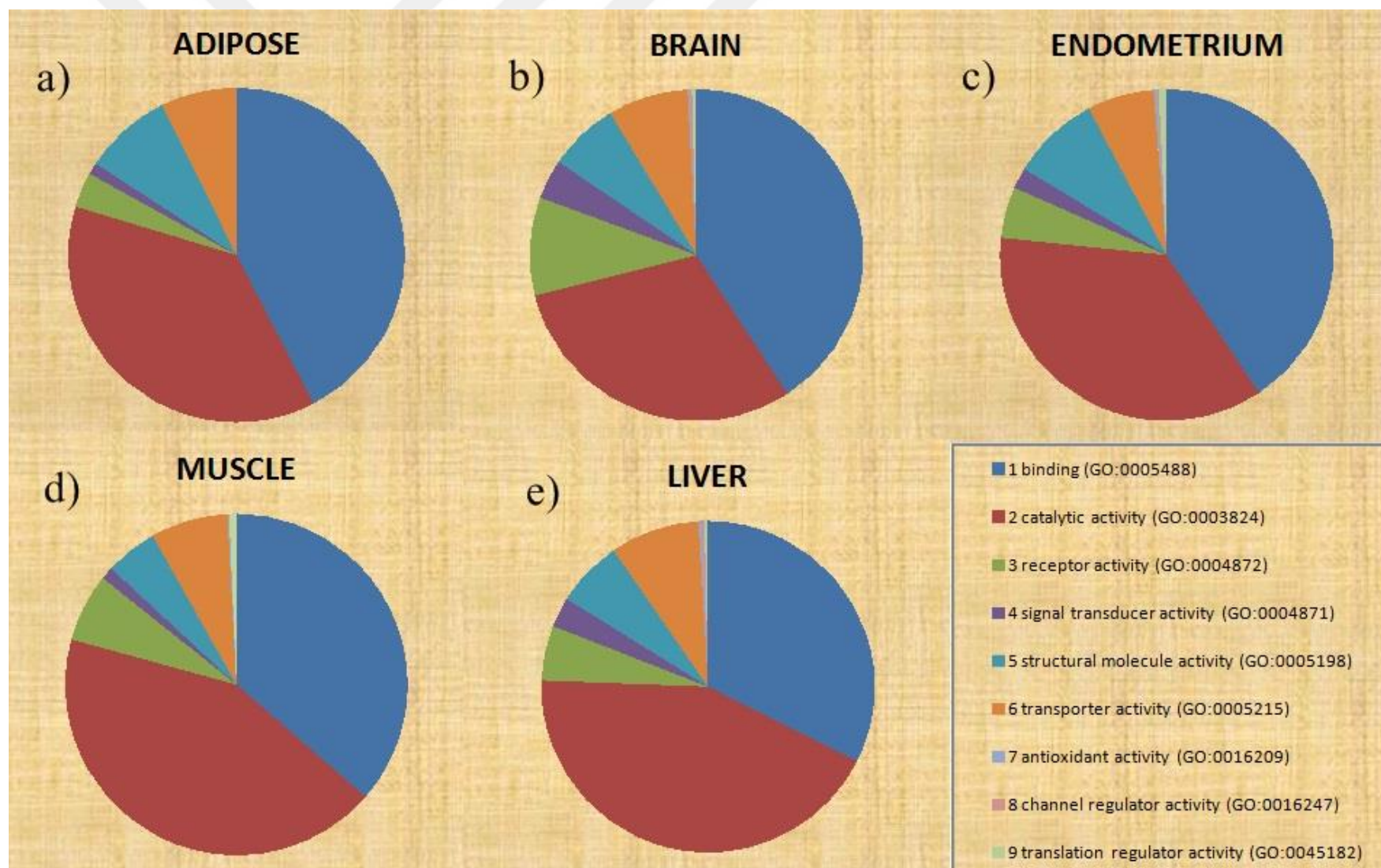


Figure 25. Molecular functions of a) adipose-specific, b) brain-specific, c) endometrium-specific, d) muscle-specific, e) liver-specific genes. Adipose and muscle-specific genes involved in 6 and 8 different molecular functions, respectively. Brain, endometrium and liver-specific genes involved in 9 different molecular functions.

4.5.2. Cellular Components of Tissue-Specific Genes

Using PANTHER, tissue-specific genes for each tissue were categorized into cellular components as a percentage. Tissue-specific genes in adipose, which were the smallest in number of all tissue samples, were involved in 5 different cellular components including organelle (32%), membrane-bounded organelle (30%), macromolecular complex (19%), protein complex (17%) and integral component of peroxisomal membrane (2%) (See Figure 26a).

Brain-specific genes were involved in 68 different cellular components. Those containing a high percentage of brain-specific genes were shown in Figure 26b. Moreover, cellular components which were highly related to brain tissue such as growth cone membrane, nBAF complex, BAF-type complex, postsynaptic membrane, synaptic membrane, axon, ion channel complex, post-synapse, synapse, neuron projection, synapse and neuron were discovered.

Endometrium-specific genes were involved in 56 different cellular components. Those containing a high percentage of endometrium-specific genes were shown in Figure 26c. Moreover, cellular components which were highly related to endometrium tissue such as nuclear lumen, extracellular exosome, intracellular organelle lumen and membrane-enclosed lumen were found.

Liver-specific genes were involved in 33 different cellular components. Those containing a high percentage of liver-specific genes were shown in Figure 26d. Moreover, cellular components which were highly related to liver tissue such as growth cone membrane, very-low-density lipoprotein particle, high-density lipoprotein particle, and vesicle were discovered.

Muscle-specific genes were involved in 59 different cellular components. Those containing a high percentage of muscle-specific genes were shown in Figure 26e. Moreover, cellular components which were highly related to muscle tissue such as Arp2/3 protein complex, actin cytoskeleton, microtubule cytoskeleton, cytoskeletal part and cytoskeleton were found.

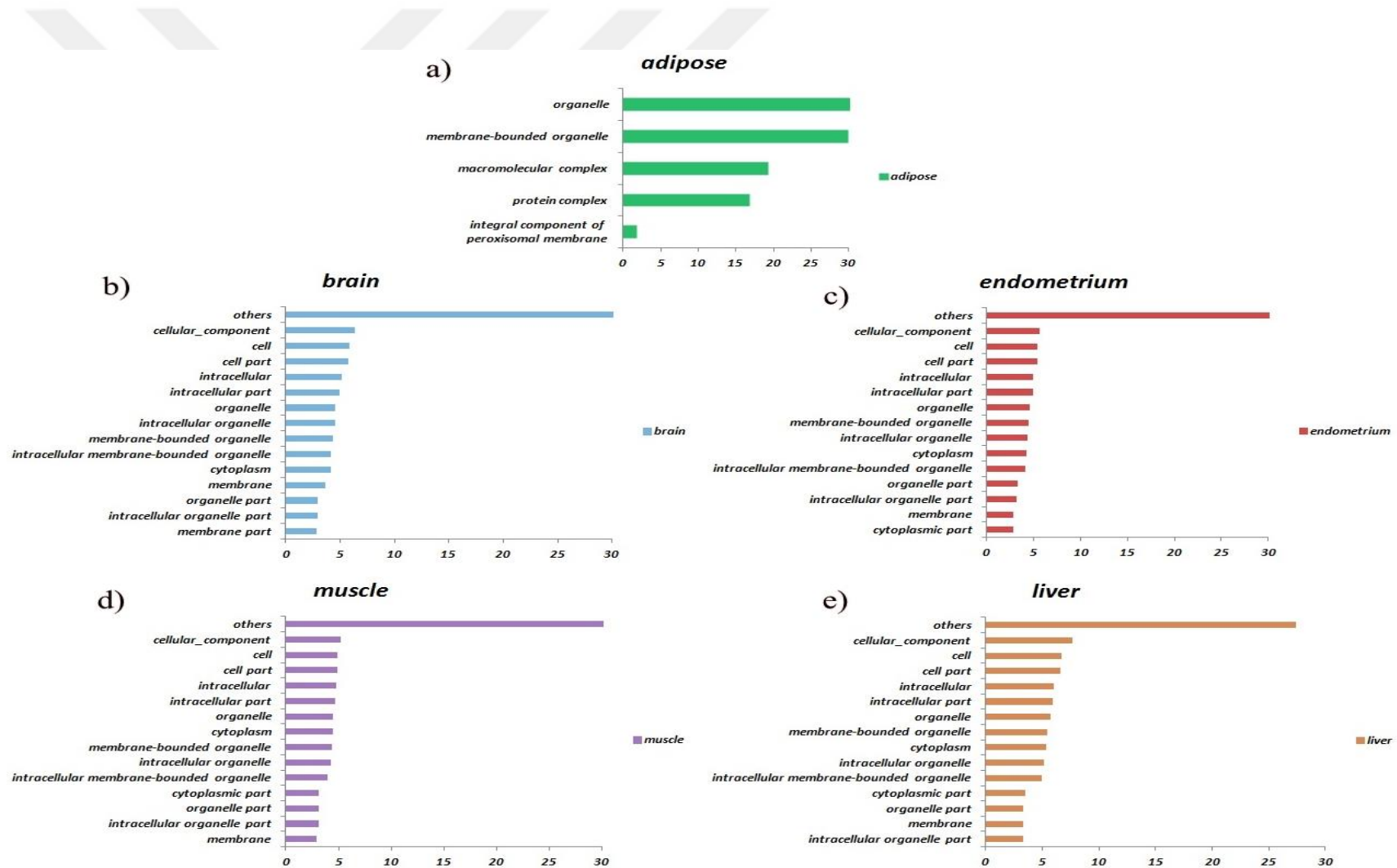


Figure 26. The percentage of cellular components of a) adipose-specific, b) brain-specific, c) endometrium-specific, d) muscle-specific, e) liver-specific genes in each tissue sample. Adipose tissue-specific genes, which were the least in all tissue samples, involved in 5 different cellular components. Brain-specific, endometrium-specific, muscle-specific, liver-specific genes involved in 68, 56, 59 and 33 different cellular components, respectively.

4.5.3. Biological Processes of Tissue-Specific Genes

Grouping tissue-specific genes according to biological process, general and tissue-specific pathways were found. Adipose had 344 tissue-specific genes which was the least compared to other tissues. Some of these genes could be categorized in general biological processes such as nucleobase-containing compound metabolic process (28 genes), nucleic acid metabolic process (25 genes), RNA metabolic process (21 genes), cellular macromolecule metabolic process (33 genes), and macromolecule metabolic process (35 genes) (Table 4).

Brain had 2278 tissue-specific genes which were the highest compared to other tissues. Moreover, some of these genes could be observed in tissue-specific pathways which were such as response to stimulus (145 genes), nervous system development (47 genes), synaptic transmission (19 genes), head development (20 genes), brain development (19 genes), negative regulation of response to stimulus (37 genes), central nervous system development (22 genes), transport (94 genes), neurological system process (24 genes), neuropeptide signalling pathway (10 genes), and neuron differentiation (21 genes) (Table 5).

Endometrium had 1190 tissue-specific genes. Some of these genes could be classified such as single-organism process, response to stress, developmental process, anatomical structure development, and epithelial cell differentiation which had 163, 45, 58, 52, and 12 genes, respectively (Table 6).

Liver had 1370 tissue-specific genes. Some of these genes involved in biological processes related to liver such as nitrogen compound metabolic process (113 genes), oxidation-reduction process (40 genes), lipid metabolic process (32 genes), response to wounding (15 genes), catabolic process (39 genes), wound healing (13 genes), organic substance catabolic process (36 genes), cellular lipid metabolic process (24 genes), phosphorus metabolic process (40 genes), regulation of cell motility (18 genes), and regulation of blood coagulation (7 genes) (Table 7).

Muscle had 974 tissue-specific genes. Some of these genes were observed in biological processes related to muscle such as regulation of gene expression (52 genes), response to stimulus (80 genes), anatomical structure development (53 genes), cytoskeleton organization (19 genes), actin cytoskeleton organization (11 genes), and regulation of actin polymerization or depolymerization (7 genes) (Table 8).

Table 4. Summary of adipose-specific genes that involve in highly adipose-specific biological processes.

pathway description	observed gene count	adjusted <i>P</i>-value	matched proteins
nucleobase-containing compound metabolic process	28	0.004	ADAL,BABAM1,C1QBP,C5H22orf28,FEN1,G3BP1,GUCY2D,HARS,HSPA8,IRF6,MED31,MINA,NUDT21,OBFC2B,PFKFB2,PHB2,PKNOX1,PPP1R8,PRMT5,PRMT7,SMG8,SNRNP40,TERT,TSN,VPS72,ZBTB6,ZNF143,ZNF691
nucleic acid metabolic process	25	0.004	BABAM1,C1QBP,C5H22orf28,FEN1,G3BP1,HARS,HSPA8,IRF6,MED31,MINA,NUDT21,OBFC2B,PHB2,PKNOX1,PPP1R8,PRMT5,PRMT7,SMG8,SNRNP40,TERT,TSN,VPS72,ZBTB6,ZNF143,ZNF691
RNA metabolic process	21	0.012	C1QBP,C5H22orf28,FEN1,HARS,HSPA8,IRF6,MED31,MINA,NUDT21,PHB2,PKNOX1,PPP1R8,PRMT5,PRMT7,SMG8,SNRNP40,TSN,VPS72,ZBTB6,ZNF143,ZNF691
cellular macromolecule metabolic process	33	0.022	BABAM1,C1QBP,C5H22orf28,CALCRL,CCT6A,CHORDC1,COPS7B,DNAJB1,DPH1,FEN1,FKBP1A,GUCY2D,HARS,HSPA8,IRF6,MED31,MINA,NUDT21,OBFC2B,PHB2,PKNOX1,PPP1R8,PRMT5,PRMT7,SMG8,SNRNP40,TCP1,TERT,TSN,VPS72,ZBTB6,ZNF143,ZNF691
macromolecule metabolic process	35	0.026	BABAM1,C1QBP,C5H22orf28,CALCRL,CCT6A,CHORDC1,COPS7B,DNAJB1,DPH1,FEN1,FKBP1A,G3BP1,GUCY2D,HARS,HSPA8,IRF6,LTF,MED31,MINA,NUDT21,OBFC2B,PHB2,PKNOX1,PPP1R8,PRMT5,PRMT7,SMG8,SNRNP40,TCP1,TERT,TSN,VPS72,ZBTB6,ZNF143,ZNF691

Table 5. Summary of brain-specific genes that involve in highly brain-specific biological processes.

pathway description	observed gene count	adjusted P-value	matched proteins
response to stimulus	145	0.000	ADCY7,ADRA2B,AGTR1,AKAP5,ALKBH8,ALOX15,APEX2,APLF,ARHGAP29,ARL4A,ARL6,ARNT,ARRB1,ARRB2,ATF3,ATG5,BBS4,BP I,BRE,CACNB3,CALB1,CALCOCO2,CARTPT,CASR,CCDC155,CD63,CDC42SE2,CEBPG,CELA1,CHRM3,CHRM4,CINP,CPLX2,CRH,CTS B,CXCR1,DBH,DDIT4,DNM1L,DRAXIN,DRD5,EDNRA,EEF1D,EHD1,EID2,ELMO2,EXOSC3,FGF5,GABRA2,GABRA4,GABRA5,GABRB 1,GABRR2,GAP43,GATA5,GNG5,GNGT2,GPR158,GPR52,GPR84,GPRC5C,HBP1,HMOX1,IKBKB,IKBKG,IL1B,IMPDH2,ITGA5,ITGB 1,LHX9,LIF,LOXL2,LTA,LTB4R,LY6D,LYZ2,MC4R,MC5R,MCM7,MIF,MUM1,MYH10,NEFL,NLK,NME2,NOSTRIN,NPBWR1,NPPC,N PR3,NPY2R,NR2C1,OMA1,OPRM1,OSM,PDE6D,PDE6G,PIK3R2,PKN1,PLCB1,PLCXD3,PNOC,POLR3A,POLR3C,PPP2CB,PRDX6,PR KAB1,PRLHR,PRMT6,PSENEN,PYY,RASGRP2,RBM4,RDH12,RFC3,RGS9BP,RHEBL1,RNF8,ROCK1,RSAD2,SCG2,SLC10A3,SLC24A1, SMAD1,SMAD4,ST3GAL6,STAT5A,STRBP,TBXA2R,TEK,TLR3,TLR9,TMEM198,TMEM30A,TMEM88,TRAF6,TSPAN12,UBA1,UBE2 T,USP1,UVSSA,VNN1,WASF1,WASF2,ZFYVE27,ZMAT3
nervous system development	47	0.000	AQP1,ARL6,ATAT1,BBS4,CBLN1,CITED1,DDIT4,DMRTA2,DRD1,ECE2,EDNRA,EHD1,ELP3,FGF5,GABRA4,GABRA5,GAP43,G JC3,HAPLN1,INA,ITGB1,KIAA1279,LHX9,LIF,MYH10,NEFL,NEUROD6,NGRN,NRXN3,OPRM1,PLCB1,PRKACB,QARS,RAB13,SMAD 1,SMARCA4,SMARCD1,SMN1,SNW1,SS18L1,STMN3,SYNGR3,TBCB,TMEM30A,TRAF6,ZFYVE27
synaptic transmission	19	0.000	CACNB2,CACNB3,CARTPT,CHRM3,CPLX2,CRH,DRD1,DRD5,GJD2,GLRA1,NAPB,NPBWR1,NPY2R,NRXN3,NTF3,OPRK1,OPRM1,P NOC,PRLHR
head development	20	0.004	AQP1,ARL6,BBS4,CBLN1,CITED1,DDIT4,DMRTA2,DRAXIN,DRD1,ECE2,EDNRA,INA,ITGB1,MYH10,NEUROD6,NTF3,PLCB1,QARS, SMAD1,SYNGR3
brain development	19	0.005	AQP1,ARL6,BBS4,CBLN1,CITED1,DDIT4,DMRTA2,DRAXIN,DRD1,ECE2,INA,ITGB1,MYH10,NEUROD6,NTF3,PLCB1,QARS,SMAD1, SYNGR3
negative regulation of response to stimulus	37	0.007	ALOX15,ARRB1,ARRB2,ARRDC3,ASPN,ATF3,BBS4,CARTPT,DDIT4,DRAXIN,DUSP14,EID2,HMOX1,HSPH1,IL1B,IL8,ITGB1,KANK2, LIF,MIF,OPRM1,PAK1IP1,PARL,PIN1,PRKACB,PRKCB,PSMA1,PTI,RGS19,RGS9BP,SCG2,SH3RF1,SMARCA4,SPRY1,STMN3,THOC5 ,VNN1
central nervous system development	22	0.008	AQP1,ARL6,BBS4,CBLN1,CITED1,DDIT4,DMRTA2,DRAXIN,DRD1,ECE2,ELP3,GABRA4,HAPLN1,INA,ITGB1,MYH10,NEUROD6,NTF 3,PLCB1,QARS,SMAD1,SYNGR3
transport	94	0.017	AKAP5,ALOX15,ANP32B,AP2B1,AP2M1,ARL3,ARRB1,ARRB2,ATP6V0C,ATP6V0E1,ATP6V1B2,ATP6V1E1,ATP6V1F,BBS4,CACNB 3,CACNG3,CASC3,CASR,CBLN1,CD63,CDC42SE2,CHRM3,CITED1,CLINT1,CORO7,CPLX2,CPLX3,DNM1L,DRD1,DYNLRB1,EDNRA, EHD1,ELMO2,G6PC3,GABRA2,GABRA4,GABRA5,GABRB1,GABRR2,IL8,JAKMIP1,KCNA4,KCNAB2,KCNIP4,KCNV1,KDELR1,KIAA1 279,KLHL3,LMBRD1,LOXL2,MAGOH,MC4R,MYH10,NAPB,NAPG,NEFL,NOSTRIN,NRXN3,OPRM1,PIK3R2,PRKCB,RAB13,RANBP2, RBM8A,RBP3,RPH3A,SCAMP4,SDAD1,SDCCAG3,SERINC1,SLC10A3,SLC17A6,SLC22A6,SLC24A1,SLC25A29,SLC2A8,SLC39A3,SLC 5A11,SLC6A13,SNX10,SPRN,SRSF3,SSR3,STAT5A,STXB6P,SYNJ1,SYTL2,THOC5,THOC7,TRPC5,TTYH1,WASF2,WC-7,ZMAT3
neurological system process	24	0.012	AQP1,BBS4,BTBD9,CACNB2,CALB1,CHRM3,DBH,DRD5,FAM65B,GABRA5,GJC3,GJD2,ITGB1,KCNAB2,MYH10,NEFL,OPRK1,OPR M1,PDE6D,PDE6G,PLCB1,RDH12,RGS9BP,SLC24A1
neuropeptide signalling pathway	10	0.032	AGRP,CARTPT,GLRA1,NPBWR1,NPY2R,OPRK1,OPRM1,PNOC,PRLHR,PYY
neuron differentiation	21	0.036	ARL3,ATAT1,BBS4,CBLN1,DDIT4,DMRTA2,DRAXIN,DRD1,EHD1,GABRA5,GAP43,ITGB1,LHX9,LIF,MYH10,NEFL,RAB13,SMN1,SS1 8L1,STMN3,ZFYVE27

Table 6. Summary of endometrium-specific genes that involve in highly endometrium-specific biological processes.

pathway description	observed gene count	adjusted P-value	matched proteins
single-organism process	163	0.000	ACAP1, ACVR2B, ALKBH7, AMD1, ANGPT1, ARL15, ARPC2, ATP5J, ATP5S, ATP6V1E2, BCKDHA, BHMT, BLOC1S1, BPIFA1, BPNT1, C5H12orf39, C5H12orf5, C8H9orf80, CA4, CCDC39, CCL11, CCL20, CCNA2, CCNB2, CDC25C, CDC42EP1, CETN2, CGA, CHRN4, CHRNG, CHTF8, CISD2, CKAP2, CLDN3, CNGA1, COQ5, COX2, COX3, CRYYBB2, CSK, CSNK1B, CXXC5, CYB5R4, CYC1, DDO, DERL3, DHRS11, DNAL4, DNMT1, DOLK, DYNC1I2, EDF1, ENSA, F2R, FAAP24, FAM18B2, FANCC, FBXL15, FLOT1, FUT2, GGCT, GLUL, GPC1, GSG2, HGS, HORMAD2, HPGD, HSPA1L, IFNG, IL12A, IST1, ITGA2, KIF20A, KRT14, LMF1, MCM3, MCM8, MED17, METTL11A, METTL14, MGST3, MON1A, MTR, ND3, NDUFA1, NDUFA11, NDUFA13, NDUFA3, NDUFA9, NDUFB2, NDUFB4, NDUFB7, NDUFB8, NDUFS6, NDUFS8, NDUFV1, NEIL2, NOS3, PARPBP, PDC, PF4, PFDN5, PLA2R1, PNKD, POGLUT1, PRDX3, PRL, PRPH, PTSS1, RAB1B, RABL6, RASA3, RSAL3, RCAN3, RILPL2, RSPO3, RXRG, SDHA, SERAC1, SIRT4, SLCA18A2, SLC25A33, SLC38A11, SMARCD1, SPC24, SPIC, SPRY4, ST8SIA4, STK40, STX19, TADA1, TFDP1, THEMIS, THTPA, TIE1, TOLLIP, TONSL, TRHR, TRIM56, TRPC2, TSHR, TTC30A, TUBB4B, TUBG1, TXNRD1, UACA, UBQL3, UPK1B, UQCRC1, UQCRCQ, USH1C, UTS2R, VDAC2, VEGFA, VRK1, VSIG1, WARS2, WDR18, YWHAHAE, ZP3, ZWILCH, ZWINT
response to stress	45	0.013	ALKBH3, ALKBH7, BPIFA1, C8H9orf80, C9H6orf211, CCL11, CCL20, CETN2, CISD2, CLDN3, COQ7, CSK, DERL3, F2R, FAAP24, FANCC, FIS1, GLUL, IFNB1, IFNG, IL12A, LONP1, MCM8, MEN1, MX2, NDUFB4, NDUFS8, NEIL2, NOS3, PARPBP, PCNA, PF4, PLA2R1, POLR3K, PRDX3, SFN, SIRT4, SMARCD1, STK4, STX4, TOLLIP, TONSL, TRIM56, VAPB, VEGFA
developmental process	58	0.013	ANGPT1, AP3D1, ASPH, ATP5J, BAX, BLOC1S1, C5H12orf5, CCDC39, CCL11, CCNB2, CGA, CISD2, CLDN3, COQ7, COX7B, CRYBB2, CSK, DNAAF2, E2F8, EDF1, FBXL15, FIS1, FLOT1, GNA11, HPGD, IFNG, IL12A, MED17, MEN1, METTL14, NDUFV2, OPA3, PCNA, PFDN5, PLA2R1, POGLUT1, PRDX3, PRL, RIC8A, RILPL2, RP1, SPIC, SPRY4, STK4, STK40, TFDP1, THEMIS, TIE1, TOLLIP, TTC30A, UPK1B, UQCRCQ, VEGFA, VSIG1, WARS2, WDR18, YWHAHAE, ZP3
anatomical structure development	52	0.014	ANGPT1, ASPH, ATP5J, BAX, BLOC1S1, C5H12orf5, CCDC39, CCL11, CCNB2, CGA, CLDN3, COQ7, COX7B, CRYBB2, CSK, DNAAF2, E2F8, FBXL15, FIS1, FLOT1, GNA11, HPGD, IFNG, IL12A, MED17, MEN1, METTL14, NDUFV2, OPA3, PCNA, PFDN5, POGLUT1, PRDX3, PRL, RIC8A, RILPL2, RP1, SPIC, STK4, STK40, TFDP1, THEMIS, TIE1, TOLLIP, TTC30A, UPK1B, UQCRCQ, VEGFA, VSIG1, WARS2, YWHAHAE, ZP3
epithelial cell differentiation	12	0.030	C5H12orf5, CLDN3, CTNNB1, E2F8, KRT17, PCNA, RILPL2, SFN, STK4, TOLLIP, UPK1B, VSIG1

Table 7. Summary of liver-specific genes that involve in highly liver-specific biological processes.

pathway description	observed gene count	adjusted P-value	matched proteins
nitrogen compound metabolic process	113	0.000	AADAT, AEBP2, ALDH6A1, ALDH7A1, APOA2, APRT, APTX, ARG1, ASCL2, ASIP, BANP, BRB, BRCC3, BTBD, CARKD, CARS2, CDLC2, CHIA, CHID1, COMT, COPRS, COX15, CRCP, CTBP2, DARS2, DIMT1, DIO2, DPAGT1, DPY30, EIF1AD, EIF4E, ENDOG, ENTPD5, ERH, ETHE1, EYA2, EZH1, FPGS, GCDH, GCSH, GLUD1, GMPR2, GSTP1, GUCY1A3, HAL, HARBI1, HEXIM2, HMGB1, ITIH1, ITIH3, IVD, LSM4, MAML2, MARS2, MED21, METTL1, MMAB, MSX2, MTFMT, MTRF1, MTRR, NFX1, NHP2L1, NIT1, NIT2, NPR2, NR1H4, NT5C2, NUDT12, OAT, ORC4, OTC, PANK3, PCBD1, PRHOXNB, PRKCSH, PRODH2, PRPF18, PRPS1, PSIP1, RBFOX2, RBM14, RBPJ, RG9MTD2, RNASE10, RNASEH2A, RNASEH2B, RPP30, SLC35D1, SLX1A, SMPD1, SND1, SNRNP35, TAF13, TAF1B, TARS, TCEAL8, TDO2, TGFB2, TK1, TPP1, TRAPPC2, TRIP6, TUT1, UBE2D2, UOX, URI1, VOPPP1, VPS36, WARS, ZNF259, ZNF274, ZNF821
oxidation-reduction process	40	0.001	ACADSB, AKR1A1, ALDH6A1, ALDH7A1, APOA2, BDH1, CBR1, COQ6, COX15, CRYZL1, CTBP2, CYBASC3, CYP3A28, DHFR, DIO2, ETFB, ETHE1, FADS3, FASTKD3, FOXRED1, GCDH, GLUD1, GMPR2, HAO2, HSD3B1, IVD, MAOB, MICAL1, MIOX, MTRR, PCBD1, POR, PRDX1, PRDX2, PRODH2, SCCPDH, SDR9C7, TDO2, TXNRD2, UOX
lipid metabolic process	32	0.001	ACADSB, ACOX1, ACSF3, AFP, AGPAT6, APOA2, APOC3, APOD, APOH, COQ2, CRYL1, DGAT2L6, DPAGT1, FADS3, GK, HAO2, HMGCS2, HSD3B1, IAH1, ISPD, MVK, NAPEPLD, NEU1, PAFAH1B2, PIGH, PIGM, PIGS, PLCG1, SMPD1, SULT1E1, TMM41, TMEM86B
response to wounding	15	0.002	APOD, APOH, CPB2, CSRP1, F3, F7, F9, FGB, HRG, MSX2, PDGFA, PLG, PROC, SERPINC1, TGFB2
catabolic process	39	0.007	AADAT, ABHD10, ACOX1, ACSF3, AKR1A1, APOA2, APOC3, CHIA, CHID1, COMT, ENDOG, FAF2, FBXO9, GABARAPL2, GCSH, GK, GLUD1, HAL, IAH1, IVD, MIOX, NAPEPLD, NEU1, NUDT12, PAFAH1B2, PLCG1, PRDX1, PRHOXNB, PRODH2, RNASEH2A, RNASEH2B, RNF146A, SMPD1, TDO2, TMEM208, TPP1, UBXN8, UOX, ZNF259
wound healing	13	0.007	APOD, APOH, CPB2, CSRP1, F3, F7, F9, FGB, HRG, MSX2, PLG, PROC, SERPINC1
organic substance catabolic process	36	0.007	AADAT, ABHD10, ACOX1, ACSF3, AKR1A1, APOA2, APOC3, CHIA, CHID1, COMT, ENDOG, FAF2, FBXO9, GCSH, GK, GLUD1, HAL, IAH1, IVD, MIOX, NAPEPLD, NEU1, NUDT12, PAFAH1B2, PLCG1, PRHOXNB, PRODH2, RNASEH2A, RNASEH2B, RNF146A, SMPD1, TDO2, TPP1, UBXN8, UOX, ZNF259
cellular lipid metabolic process	24	0.009	ACADSB, ACOX1, ACSF3, AGPAT6, APOA2, APOC3, APOH, COQ2, CRYL1, DPAGT1, FADS3, GK, HAO2, HMGCS2, ISPD, MVK, NAPEPLD, PIGH, PIGM, PIGS, PLCG1, SMPD1, TMM41, TMEM86B
phosphorus metabolic process	40	0.015	AADAT, ADAM10, AGPAT6, APOA2, APRT, CARKD, DAK, DERA, DHFR, DPAGT1, ENTPD5, ERH, EYA2, FASTKD3, GK, GLYCTK, GMPR2, GTF2H2, GUCY1A3, LIMK2, MAP3K13, MVD, MVK, NAPEPLD, NPR2, NT5C2, NUDT12, PANK3, PIGH, PIGM, PIGS, PIM1, PLCG1, PPP2CA, PRPS1, SMPD1, TMM41, TDO2, TGFB2, TK1
regulation of cell motility	18	0.017	AAMP, ADAM10, APOD, APOH, F7, GATA3, HRG, IGF1R, IGFBP5, KITLG, PBLD, PDGFA, PLCG1, RABGEF1, RNASE10, TGFB2, TRIP6, VEGFB
regulation of blood coagulation	7	0.020	APOH, CPB2, HRG, PDGFA, PLG, SERPINC1, SERPINF2

Table 8. Summary of muscle-specific genes that involve in highly muscle-specific biological processes.

pathway description	observed gene count	adjusted <i>P</i> -value	matched proteins
developmental process	62	0.001	ANKRD1,ATP5F1,ATP6V1B1,AZI2,C7H19orf10,CAND1,CAP1,CCDC151,CCL3,CEP41,CFL1,CFTR,CHURC1,CIB1,CNN3,CPQ,CRYBA4,CSNK2A1,CTDNEP1,CTNS,CX3CR1,DBI,DNM2,DUSP6,EIF2B2,EXT1,FAM3C,FECH,FERMT3,FXN,GINS1,HTRA2,ITGB2,LGR5,MEA1,MOSPD3,NME1,NSRP1,OOEP,PDE2A,PITPNB,POLB,PPIB,PRPSAP2,PSMB10,PSMC4,RAP1B,RBBP8,RND1,RNF114,RSL1D1,SEMA4A,SERP1,SLC39A1,SPG20,SRR,TMEM138,TMEM17,TRIP12,UFL1,VMP1,YIPF6
regulation of gene expression	52	0.002	ALKBH2,ANKRD1,BIRC5,C7H19orf10,CCL3,CHP,CHURC1,CIB1,CITED4,CLU,CSNK2A1,DICER1,EIF2B2,EIF2C2,EIF4A1,FECH,FHIT,GATC,GMEB1,GTTF2F2,IRF3,KIT,MAF1,MED7,MTPN,NCBP2,NFYC,NLRP3,NSRP1,NUDT16,PAXIP1,PDE2A,PSPC1,PTCD3,RBBP8,RIPK2,SERP1,SIRT7,SRSF6,STRAP,TAF12,TAX1BP1,TFB1M,TFE3,TMEM59,TOX4,UFL1,USP15,WDR61,ZNF226,ZNF34,ZNF526
response to stimulus	80	0.003	ADH5,AGER,AIF1,ALDH3B1,ALKBH2,ANKRD1,ARL5A,AZI2,BNIP3L,C25H7orf59,C7H19orf10,CCL3,CCL4,CFL1,CFTR,CHP,CITED4,CLEC7A,CLU,CPQ,CSNK2A1,CTNS,CX3CR1,CYBA,DBI,DICER1,DUSP6,EIF2B2,EIF2C2,EXT1,FAM162A,FECH,FHIT,FXN,GDAP2,HBXIP,HTRA2,IFI6,IFNAR2,ITGB2,ITPR3,KIAA0101,LGR5,MASTL,MPZL1,NCF1,NDUFA12,NLRP3,PAXIP1,PDCL,PDE2A,PFKL,PYCARD,PYCR1,RAB5C,RAB8B,RABL3,RAP1B,RASGEF1B,RCAN1,RHPN2,RIPK2,RND1,SERP1,SESN2,SGK1,SHFM1,SRR,TFE3,TMEM17,TMX1,TRIP12,TSPAN6,UFC1,UFL1,USP15,WDR61,XRCC3,ZFYVE26,ZRANB1
anatomical structure development	53	0.007	ANKRD1,ATP5F1,ATP6V1B1,AZI2,C7H19orf10,CAP1,CCDC151,CCL3,CEP41,CFL1,CFTR,CIB1,CNN3,CPQ,CRYBA4,CSNK2A1,CTDNEP1,CTNS,CX3CR1,DBI,DNM2,EIF2B2,EXT1,FECH,FERMT3,FXN,GINS1,HTRA2,ITGB2,LGR5,MOSPD3,NME1,OOEP,PDE2A,PITPNB,POLB,PPIB,PRPSAP2,PSMB10,PSMC4,RAP1B,RBBP8,RND1,SEMA4A,SERP1,SLC39A1,SPG20,SRR,TMEM138,TMEM17,TRIP12,UFL1,YIPF6
cytoskeleton organization	19	0.011	ACTR2,AIF1,ARPC1B,ARPC5,BIRC5,CAP1,CCDC151,CCL3,CHP,CIB1,CNN3,CORO2A,HAUS1,KIAA0101,KIT,RND1,TBCD,TMSB10,ZRANB1
actin cytoskeleton organization	11	0.047	ACTR2,AIF1,ARPC1B,ARPC5,CAP1,CFL1,CNN3,CORO2A,KIT,RND1,TMSB10
regulation of actin polymerization or depolymerization	7	0.049	ACTR2,ARFGEF1,ARPC1B,ARPC5,CFL1,PYCARD,TMSB10

4.5.4. Protein-Protein Interactions of Tissue-Specific Genes

Using STRING database, protein-protein interactions of tissue-specific genes in each tissue were generated. Analyses of the resulting networks demonstrated that the proteins of these tissue-specific genes have more interactions among themselves than would be expected for a random set of proteins of similar size, drawn from the genome ($P < 0.05$, see Table 9). Moreover, such enrichments indicate that the proteins are at least partially biologically connected, as a group.

Table 9. Summary of protein-protein interactions of tissue-specific genes in each tissue.

	MUSCLE	LIVER	ADIPOSE	ENDOMETRIUM	BRAIN
Number of Nodes	926	1336	316	1107	1848
Average Node Degree	4	4.77	0.937	5.35	7.79
Clustering Coefficient	0.573	0.546	0.879	0.637	0.526
Number of Edges	1853	3184	148	2959	7202
Expected Number of Edges	1434	2310	110	2129	5717
PPI Enrichment <i>P</i>-value	$P < 0.05$	$P < 0.05$	$P < 0.05$	$P < 0.05$	$P < 0.05$

*PPI = protein-protein interactions.

In adipose tissue; SELE, PHB2, HSPA8 and ATP6V0D2 were selected for SNP analysis as they were highly associated with adipose-specific biological processes (Table 4). The protein-protein interactions of these genes with other adipose tissue-specific genes were shown in Figure 27, where the interactions were quite low compared to other tissue-specific genes.

In brain tissue; SPRN, PHLPP2, NMU, NEFL, CRH and AGRP were selected for SNP analysis as they were highly associated with brain-specific biological processes (Table 5). The protein-protein interactions of PHLPP2, NMU, NEFL, and CRH with other brain tissue-specific genes were shown in Figure 28, where the most interacted protein was the product of PHLPP2 gene (70 protein-protein interactions).

In endometrium tissue; VEGFA, TOP2A, IL12A, FLT1 and AMD1 were selected for SNP analysis as they were highly associated with endometrium-specific biological processes (Table 6). The protein-protein interactions of these genes with other endometrium tissue-

specific genes were shown in Figure 29, where the most interacted protein was the product of TOP2A gene (78 protein-protein interactions).

In liver tissue; SLC2A2, IGF1R, GNA14, FOXA1, CYP4A11, CDC42 and APOC3 were selected for SNP analysis as they were highly associated with liver-specific biological processes (Table 7). The protein-protein interactions of these genes with other liver tissue-specific genes were shown in Figure 30, where the most interacted protein was the product of CDC42 gene (47 protein-protein interactions).

In muscle tissue; TFB1M, RCAN1, HDAC5, CSNK2A1, ARPC5, ARPC1B and ACTB were selected for SNP analysis as they were highly associated with muscle-specific biological processes (Table 8). The protein-protein interactions of these genes with other muscle tissue-specific genes were shown in Figure 31, where the most interacted protein was the product of CSNK2A1 gene (17 protein-protein interactions).

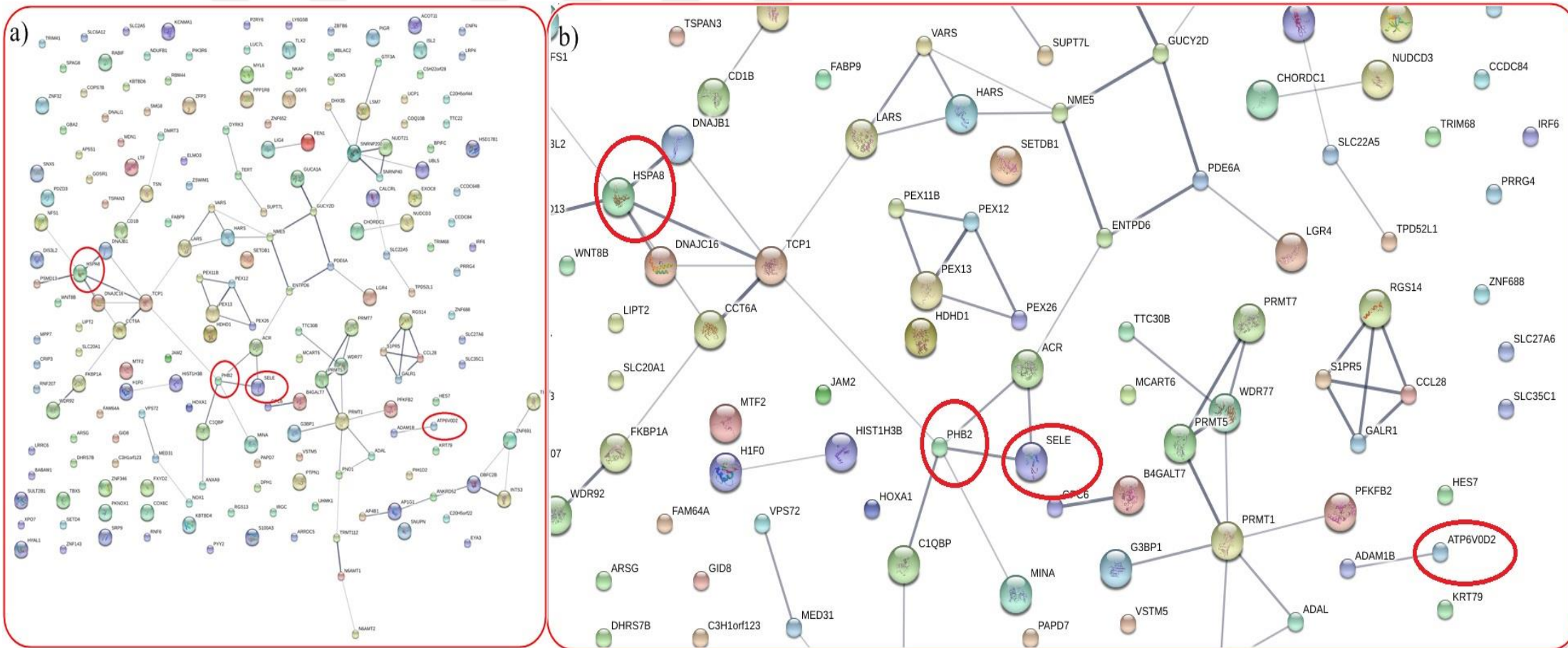


Figure 27. Protein-protein interactions of adipose-specific genes in STRING database. a) All adipose-specific genes and b) the close-up of those involved in highly adipose-specific biological processes are shown. Red ovals label HSPA8 (4 interactions), PHB2 (3), SELE (2) and ATP6V0D2 (1) genes that have adipose-specific functions.

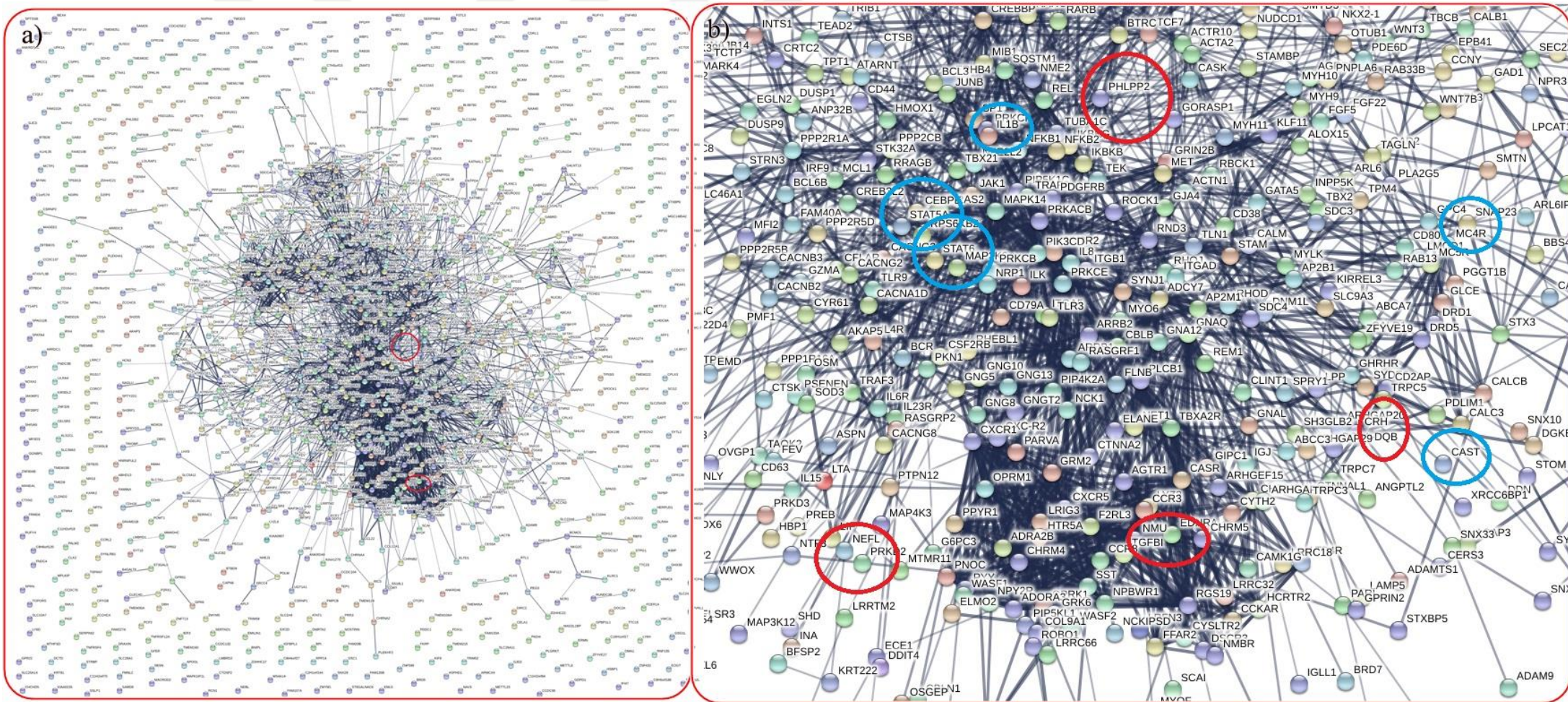


Figure 28. Protein-protein interactions of brain-specific genes in STRING database. a) All brain-specific genes and b) the close-up of those involved in highly brain-specific biological processes are shown. Red ovals label PHLPP2 (70 interactions), NMU (39), CRH (13) and NEFL (4) genes that have brain-specific functions. Blue ovals label STAT6 (31 interactions), STAT5A (26), IL1B (25), MC4R (7) and CAST (1) genes that have been candidate markers of economic traits in cattle.

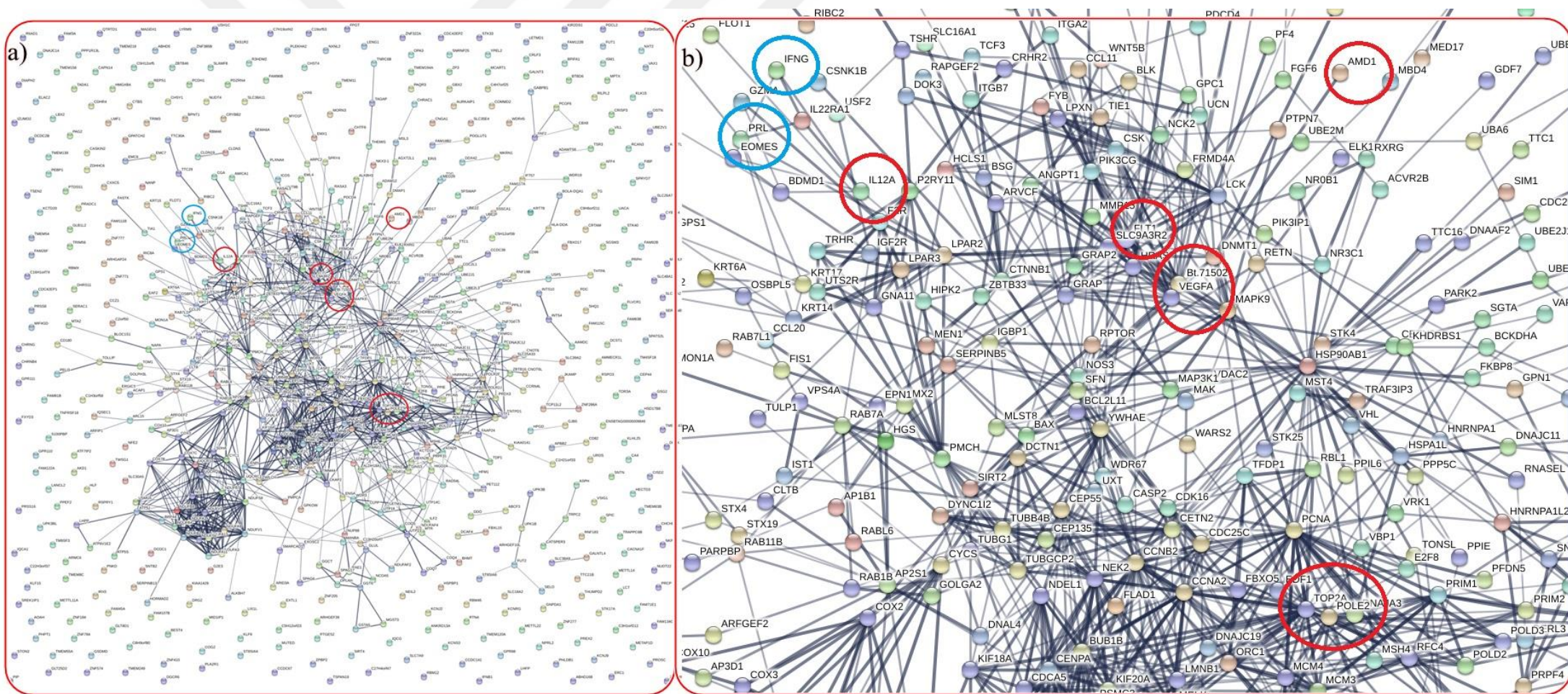


Figure 29. Protein-protein interactions of endometrium-specific genes in STRING database. a) All endometrium-specific genes and b) the close-up of those involved in highly endometrium-specific biological processes are shown. Red ovals label TOP2A (78 interactions), VEGFA (33), FLT1 (28), IL12A (5) and AMD1 (1) genes that have endometrium-specific functions. Blue ovals label PRL (6 interactions) and IFNG (3) genes that have been candidate markers of economic traits in cattle.

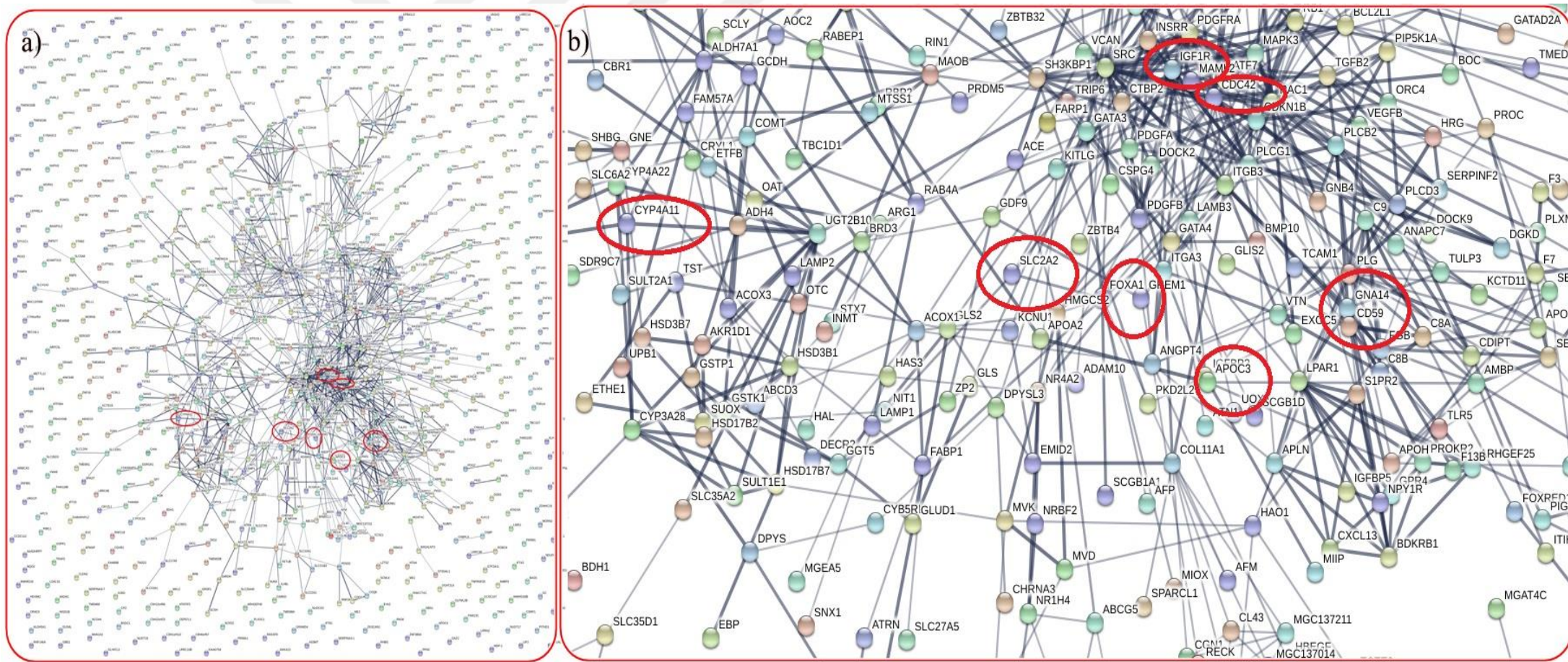


Figure 30. Protein-protein interactions of liver-specific genes in STRING database. a) All liver-specific genes and b) the close-up of those involved in highly liver-specific biological processes are shown. Red ovals label CDC42 (47 interactions), GNA14 (22), IGF1R (18), FOXA1 (17), APOC3 (8), CYP4A11 (8) and SLC2A2 (4) genes that have liver-specific functions.

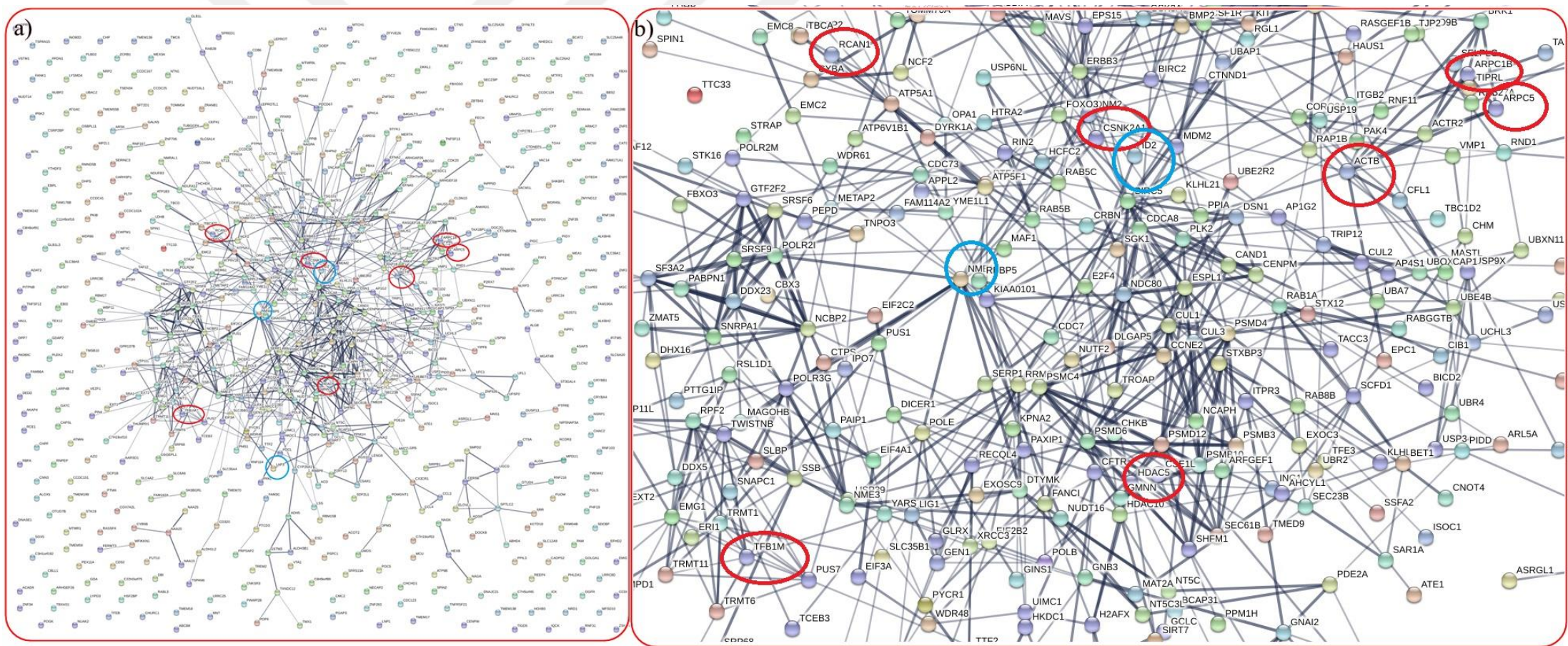


Figure 31. Protein-protein interactions of muscle-specific genes in STRING database. a) All muscle-specific genes and b) the close-up of those involved in highly muscle-specific biological processes are shown. Red ovals label CSNK2A1 (17 interactions), TFB1M (15), HDAC5 (15), ACTB (12), ARPC1B (5), ARPC5 (5) and RCAN1 (5) genes that have muscle-specific functions. Blue ovals label NME1 (22 interactions) and ID2 (3) genes that have been candidate markers of economic traits in cattle.

4.6. SNP ANALYSIS

Using dbSNP, SNP annotations of some tissue-specific genes, which were found to have obvious tissue-specific functions and/or high amount of interactions with other tissue-specific genes, were identified in their coding regions and categorized as missense, nonsense and coding synonymous (see Table 10).

In each sample, there were more missense SNPs over other two kinds of SNPs annotations. Among selected adipose tissue-specific genes, PHB2 was found to have the highest total of SNPs annotations (135 SNPs). PHLPP2 was the brain-specific gene which contains the most SNPs annotations among selected brain tissue-specific genes (146 SNPs). AMD1 had the most SNPs annotations among the selected endometrium-specific genes (205 SNPs). ARPC5 gene, which was found muscle-specific, and IL12A gene, which was found endometrium-specific, did not have any nonsense SNPs. Furthermore, No SNP annotations for selected tissue-specific genes such as SPRN in the brain, CDC42 in liver and VEGFA in endometrium were found. This may be due to lack of SNPs study for these genes in the bovine genome.

Excluding VEGFA, CDC42 and SPRN genes, the percentage of SNPs annotations in the exonic regions of remained selected tissue-specific genes were found as 25.1% were silent mutations, 72% were missense mutations, and 2.9% were nonsense mutations. Among these genes, the highest number of SNPs occurred in IGF1R (13.6%) and HDAC5 (12.7%) genes from liver and muscle tissues, respectively.

Table 10. The number of SNP annotations in coding types of genes with highly tissue-specific functions.

TISSUE	GENE	MISSENSE	NONSENSE	CODING SYNONYMOUS	PROTEIN
ADIPOSE	SELE	36	1	16	E-selectin
ADIPOSE	PHB2	100	5	30	Prohibitin-2
ADIPOSE	HSPA8	64	5	30	Heat shock cognate 71 kDa protein
ADIPOSE	ATP6V0D2	84	5	30	V-type proton ATPase subunit d 2
BRAIN	SPRN	N/A	N/A	N/A	Shadow of prion protein
BRAIN	PHLPP2	100	2	44	PH domain leucine-rich repeat-containing protein phosphatase 2
BRAIN	NMU	16	1	4	Neuromedin-U
BRAIN	NEFL	173	9	57	Neurofilament light polypeptide
BRAIN	CRH	143	2	53	Corticoliberin
BRAIN	AGRP	29	1	11	Agouti-related protein
ENDOMETRIUM	VEGFA	N/A	N/A	N/A	Vascular endothelial growth factor A
ENDOMETRIUM	TOP2A	111	7	45	DNA topoisomerase 2-alpha
ENDOMETRIUM	IL12A	23	N/A	9	Interleukin-12 subunit alpha
ENDOMETRIUM	FLT1	144	3	58	Vascular endothelial growth factor receptor 1
ENDOMETRIUM	AMD1	69	2	21	S-adenosylmethionine decarboxylase proenzyme
LIVER	SLC2A2	24	2	13	Solute carrier family 2, facilitated glucose transporter member 2
LIVER	IGF1R	413	12	108	Insulin-like growth factor 1 receptor
LIVER	GNA14	158	6	54	Guanine nucleotide-binding protein subunit alpha-14
LIVER	FOXA1	137	5	44	Hepatocyte nuclear factor 3-alpha
LIVER	CYP4A11	107	2	25	Cytochrome P450 4A11
LIVER	CDC42	N/A	N/A	N/A	Cell division control protein 42 homolog
LIVER	APOC3	16	2	11	Apolipoprotein C-III
MUSCLE	TFB1M	196	4	63	Dimethyladenosine transferase 1, mitochondrial
MUSCLE	RCAN1	62	2	26	Calcipressin-1
MUSCLE	HDAC5	351	20	125	Histone deacetylase 5
MUSCLE	CSNK2A1	65	2	32	Casein kinase II subunit alpha
MUSCLE	ARPC5	42	N/A	11	Actin-related protein 2/3 complex subunit 5
MUSCLE	ARPC1B	104	7	29	Actin-related protein 2/3 complex subunit 1B
MUSCLE	ACTB	46	5	33	Actin, cytoplasmic 1

5. DISCUSSION

The current study investigated the tissue-specific gene expression of multiple tissues such as adipose, brain, endometrium, liver and brain. Although much research (McCabe *et al.*, 2012; Lee *et al.*, 2013; Foley *et al.*, 2015) has been previously done for single tissues, there have been less multi-tissue studies of bovine (Harhay *et al.*, 2010; Canovas *et al.*, 2014; McGettingan *et al.*, 2016) in literature.

The results of this study identified novel genes were that could be targeted in genomic selection for increases in performance traits related to each tissue such as SELE, PHB2, HSPA8, and ATP6V0D2 (adipose-specific); SPRN, PHLPP2, NMU, NEFL, CRH, and AGRP (brain-specific); VEGFA, TOP2A, IL12A, FLT1, and AMD1 (endometrium-specific); ACOX1, SLC2A2, IGF1R, GNA14, FOXA1, CYP4A11, CDC42, CYP3A28, and APOC3 (liver-specific); TFB1M, RCAN1, HDAC5, CSNK2A1, ARPC5, ARPC1B and ACTB (muscle-specific).

Moreover, MC4R gene in brain tissue (Ibeagha-Awemu *et al.*, 2008), PRL (Dybus, 2002) and TG (Casas *et al.*, 2005) genes in endometrium tissue, NCAPG (Lindholm-Perry *et al.*, 2011) gene in liver tissue and LAP3 (Lindholm-Perry *et al.*, 2011) gene in muscle tissue were found similarly as the previous studies have indicated.

However, some of the genes that were found brain-specific in the current study, were defined as biomarkers of various traits in other studies; STAT5A gene (Khatib *et al.*, 2008) was associated with milk traits, IL1B gene (Ogorevc *et al.*, 2009) was related to mastitis traits, CAST gene (Barendse *et al.*, 2008) was associated with meat traits, and GHRH gene (Franco *et al.*, 2005) was related to cold carcass weight trait.

IFNG gene (Ogorevc *et al.*, 2009), which was found endometrium-specific in the current study, was defined as a biomarker of mastitis trait. Muscle-specific genes of the present study such as ABCG2 (Olsen *et al.*, 2007), ID2 (Miyoshi *et al.*, 2002) and NME1 (Ogorevc *et al.*, 2009) were associated with milk traits. Additionally, C5AR1 (Ogorevc *et al.*, 2009), another tissue-specific gene of muscle, was related to mastitis trait.

This suggest that these genes are important and possibly useful for selection in more phenotypes than has previous been thought.

5.1. LIVER-SPECIFIC GENES

5.1.1. CDC42

Our analysis revealed that CDC42 was potentially one of the most important tissue-specific genes in the liver and had the largest number of interactions with other differentially expressed genes in the same tissue. The gene encodes cell division control protein 42 homolog protein which involves in regulation of the cell cycle. Moreover, it interacts selectively and non-covalently with GTP as molecular function. There has been no study of *Bos taurus* showing this gene was expressed differentially in liver. However, a study about negative energy balance showed PAK4 gene, which has been known to interact with CDC42 (Laporta *et al.*, 2014), was differentially expressed in the liver of beef cows on a grazing system through their gestation, peripartum and early lactation period. There are also studies which investigate the function of CDC42 in mouse liver. Shen *et al.*, (2008) found that it plays an important role for liver generation by regulating proliferative signalling. The other study with mice targeted the protein function of Cdc42. Van Hengel *et al.* (2008) showed that mice which did not have Cdc42 in their liver structure showed hepatomegaly development just after birth and increased jaundice sickness.

5.1.2. GNA14

GNA14 was another differentially expressed gene in the liver which also interacts quite a lot with other genes. Guanine nucleotide-binding protein subunit alpha-14, which involves in several transmembrane signalling systems, was encoded by this gene. The molecular function of the gene can be categorized as GTPase activity, GTP binding, metal ion binding and signal transducer activity. Grala *et al.* (2013) identified the alteration of this gene in the liver of cows which were underfed compared to adequately-fed animals. The gene was down-regulated by energy restriction. However, a study (Chen *et al.*, 2008) which conducted in humans and mice resulted in the detection of this gene only in kidney and lung while other G protein subunits such as GNA11 and Gnaq were expressed in liver.

5.1.3. CYP4A11- CYP3A28

CYP4A11 was found to have interactions with 21 genes in the liver which are also differentially expressed. The gene encodes cytochrome P450 4A11 protein which is an enzyme catalysing various reactions including drug metabolism and synthesis of lipids such as cholesterol and steroids. Cytochrome P450 3A28 is another protein in the group of heme-

thiolate monooxygenases. It interacts with only 7 genes in the group of our differentially expressed genes of liver.

CYP4A11 and CYP3A28 are very known to be highly expressed in the liver and kidney (Cantiello *et al.*, 2008; Giantin *et al.*, 2008, 2010). Zancanella *et al.* (2010) studied with cows over the genes and showed the role in the oxidative metabolism of xenobiotics in liver. In another study with pigs, the CYP4A11 gene was involved in cholesterol metabolism (Ramayo-Caldas *et al.*, 2012). The same study showed the differential expression of the gene for energy production, as well. Another study (Doelman *et al.*, 2012) investigated ruminant transcriptional regulation of ketogenic enzymes during food restriction (as they do not absorb so much glucose and meet their need from hepatic gluconeogenesis and ketogenesis). After 24 hours of food withdrawal, CYP4A11 was up-regulated in the liver of dairy cows (Doelman *et al.*, 2012). It had also been identified as differentially expressed in similar experiments in mice (Hardwick, 2008; Savas *et al.*, 2009). Moreover, the gene has been shown to be involved in retinol metabolism in horse breeds (Wang *et al.*, 2014b). Another study demonstrated the effect of the gene in regulating hepatic lipid metabolism resulting in up-regulation of CYP4A11 in the liver of calves treated with clofibrate (Litherland *et al.*, 2010). Finally, Sales *et al.* (2012) revealed the association of SNPs of CYP3A28 with milk quality and quantity.

5.1.4. IGF1R

Insulin-like growth factor-1 receptor (IGF1R) is another protein-coding gene which was differentially expressed in liver and found to have protein-protein interacts with a large number of other genes as well. IGF1R plays a major role in biological processes such as immune response, insulin receptor signalling, protein tetramerization and autophosphorylation. Looor *et al.* (2007) showed that nutrition-induced ketosis alters IGF1R gene regulation in the liver of periparturient dairy cows. The gene was also shown to be affected by negative energy balance during the early post-partum period of dairy cows. Animals, which were having severe NEB, were recorded the significant reduction of hepatic IGF1R expression. Alam *et al.* (2012) aimed to find energy homeostasis by comparing the expression of the genes in liver of Holstein-Friesian and Jersey cows and their F1 hybrid. The experiment was important as the liver controls the vital processes of energy homeostasis such as lipid and glycogen metabolism. The expression of the gene was highly significant in F1 cross of the animals which had higher milk yields and milk solids, as well. The gene was

shown to be correlated with milk yield and milk fat concentration in a positive manner. There is an interesting study which found the association of down-regulated IGF1 expression with dwarfism in Holstein calves (Blum *et al.*, 2007). Hepatic mRNA for IGF1-R was also shown to be downregulated in dwarfs compared to their half-siblings and control groups (Blum *et al.*, 2007).

5.1.5. APOC3

Apolipoprotein C-3 gene involves in inhibiting lipoprotein lipase and hepatic lipase and decreasing the uptake of lymph chylomicrons by hepatic cells. Thus, it can be thought to delay the catabolism of triglyceride-rich particles. APOC3 gene is predominantly expressed in liver and intestine (Jong *et al.*, 1999). Although we found the gene differentially expressed in liver, the previous studies have shown it has a more significant expression in the intestine of human, mice and bovine compared to liver. Schwerin *et al.* (2006) identified the gene as trait-associated expressed intestine gene in cattle breeds. In their study, cattle of the Charolais breed were found to have a significantly greater expression of the gene compared to German Holstein bulls. According to Yamamoto *et al.* (2003), the hypertriglyceridemia development was induced by the increased concentration of APOC3 protein.

5.1.6. FOXA1

Our results showed FOXA1 was one of the differentially expressed genes in the liver. The gene encodes forkhead box protein-A1 which has an important role in various biological processes such as hormone metabolism, glucose homeostasis, chromatin remodelling, etc. (UniProt Consortium, 2011) The FOXA proteins were first identified in the liver as transcription factors essential for the regulation of hepatocyte-specific expression of several target genes (Liu *et al.*, 2014). The gene was also found to have liver-specific expression in humans (Wolf, 2006) and recorded to be differentially expressed in rat liver also (Jia *et al.*, 2013). There have been numerous studies that identify FOXA1 as the responsible gene for cell differentiation in the gut epithelial cells (Friedman and Kaestner, 2006; Gao *et al.*, 2008). However, Besnard *et al.* (2004) discovered that FOXA1 gene was also expressed in the mouse endometrium and uterine glands. Killeen *et al.* (2014) found differential expression of the gene in the endometrium of cows as well.

5.1.7. SLC2A2

Solute carrier family-2, facilitated glucose transporter member-2 was also differentially expressed in our experiment. The gene produces an integral plasma membrane glycoprotein of the liver which mediates facilitated bidirectional glucose transport (UniProt, 2011). It has also been identified as glucose sensor due to its low affinity for glucose (Stelzer *et al.*, 2016). The gene has been primarily recorded in cellular membranes of liver and pancreatic β cell (Michau *et al.*, 2013). Rosenbaum *et al.* (2012) identified that the gene in the liver of sows was differentially regulated in intermediary metabolism during lactation which indicates the influence of glucose and pyruvate metabolism. Selim *et al.* (2015) investigated the absence of alteration between high energy diet and controlled-energy diet during the transition period of the cow. They did not find any difference in the gene expression relating to hepatic glucose release. Gene expression profiling of liver and mammary tissues of lactating dairy cows recorded a higher expression level of SLC2A2 (Baik *et al.*, 2009). Wiedemann *et al.* (2013) studied the effect of different milking regimes of early lactation on hepatic genes and found SLC2A2 was recorded with no significant change in control, once-daily milking, and continuous milking groups.

5.1.8. ACOX1

ACOX1 gene encodes the enzyme called peroxisomal acyl-coenzyme-A oxidase-1 which involves in fatty acid beta-oxidation (UniProt, 2011). The gene, in many studies, was found to have an important role in liver tissue (Oaxaca-Castillo *et al.*, 2007). Alterations of the gene expression of this gene were detected in postpartum beef and dairy cows after weaning (Hisham *et al.*, 2010). Rosenbaum *et al.* (2013) showed the up-regulation of the gene in the liver of lactating comparing with non-lactating sows. The gene was studied in ruminants and non-ruminants under the activation of peroxisome proliferator-activated receptors (PPAR) which are vital in the lipid metabolism. Although the gene was discovered to be regulated in nonruminant species (Tugwood *et al.*, 1992; Duplus and Forest, 2002), the expression was not significant in ruminants (Bionaz *et al.*, 2008; Thering *et al.*, 2009). The other important role of the liver is detoxification. Riboni *et al.* (2015) studied the gene expression profile of liver in response to nonsteroidal anti-inflammatory drugs (NSAID) during the transition period, which is the most sensible time of the animal for inflammation. ACOX1 was one of the differentially expressed genes in dairy animals treated with NSAID compared to untreated cows. Diet of the animal can also change metabolic gene networks in liver (Loor, 2010). Khan *et al.* (2014) compared the dairy cows overfed (higher energy) with

control group during late pregnancy. ACOX1 was found greatly expressed in cows fed with higher energy. It was, however, down-regulated in the cows fed in control. In another dietary experiment of hepatic gene expression, ACOX1 gene showed alterations in different diets (Graugnard *et al.*, 2013). Nutrition-induced ketosis also caused up-regulated expression of the gene in periparturient dairy animals.

5.2. BRAIN-SPECIFIC GENES

5.2.1. PHLPP2

PHLPP2 encodes one of the isoforms of PHPL (PH domain and Leucine-rich repeat Protein Phosphatases) which regulate Akt serine-threonine kinases and conventional/novel protein kinase C (PKC) isoforms. The gene plays a major role in hippocampus development which was shown in rat experiments (Jackson *et al.*, 2009, 2010). We reported the gene differentially expressed in the brain tissue and found it also interacted with 70 other DEGs from the brain. However, there is little information about the gene function in cow's brain. The previous studies are mostly made for mice and humans. Jackson *et al.* (2013) showed the gene differentially regulated AKT and ERK in astrocytes. Teng *et al.* (2016) found the gene expression in glioma cells of human was negatively associated with the severity of tumours. Moreover, the gene was shown to be downregulated by tumour types in other tissues including colon cancer, breast cancer, stomach cancer, pancreas cancer and prostate cancer (Liu *et al.*, 2009; Qiao *et al.*, 2010; O'Neill *et al.*, 2013; Nitsche *et al.*, 2012). Their experiment resulted in the loss of the protein contributes to glioma development and progression. In another study with mice, Wei *et al.* (2014) tried to establish a potential therapeutic agent for ischemia/reperfusion (I/R) injury. They found the gene is vital to mediate cell death during I/R injuries. The other result of the experiment was that antisense oligonucleotide treatment inhibited PHLPP2 which may contribute to new treatment methods for I/R injuries.

5.2.2. NMU

Neuromedin U (NMU) is a protein-coding gene whose protein is a member of the neuromedin family of neuropeptides (Stelzer *et al.*, 2016). The protein is found in the brain of mammals however it involves in various biological processes such as digestion, hormone secretion, and regulation of smooth muscle contraction and sensory perception of pain (UniProt, 2011). This was one of the DEGs which interacted with 39 genes in our analyses. There were other studies which discovered the gene highly expressed in central nervous

system (Yayou, 2012). It had been already known that the gene regulates the stress responses in rodents (Jaszberenyi *et al.*, 2007). Yayou *et al.* (2009) also showed alterations in the body temperature and adrenocorticotrophic hormone levels did affect the gene expression of brain tissue in steers. These results may suggest that the protein of the gene is responsible for the thermoregulation and active in hypothalamic-pituitary-adrenal axis. The gene was also found significant in evolution studies of nervous system genes with dolphin genome. In particular it was found to be under positive selection genes ($dN/dS > 1$) in the dolphin lineage (McGowen *et al.*, 2012). The gene was shown to have a major role in the neuroendocrine function and neuropeptide hormonal activity which has an effect on the brain (Hanada *et al.*, 2004).

5.2.3. NEFL

NEFL is a protein-coding gene found brain-specific in the current study. It encodes neurofilament light polypeptide which is a type IV intermediate filament heteropolymers composed of light, medium, and heavy chains (UniProt, 2011). The gene is associated with Charcot-Marie-Tooth disease which is the most commonly inherited neurological disorder in humans (Jordanova *et al.*, 2003). The gene was also found down-regulated in another disease affecting human named Creutzfeldt-Jakob (Tian *et al.*, 2012). There are several biological processes the gene is involved such as the development of cerebral cortex, spinal cord and hippocampus, organisation and polymerization of intermediate filament, and response to peptide hormone, sodium arsenite, and toxic substances (Capasso *et al.*, 2014). Pariset *et al.* (2013) analysed gene pathways affected by Bovine Spastic Paresis (BSP) which is a male and female cattle-affecting neuromuscular disorder. The gene was under-expressed for the affected animals comparing with healthy animals. Woelders *et al.* (2014) checked the gene expression of dairy cows during oestrous. NEFL was one of the genes which had a positive association with oestrous behaviour. The oestrous behaviour associated gene was involved in the process of growth in dairy cows (Kommadath *et al.*, 2013).

5.2.4. SPRN

SPRN (Shadow of Prion Protein) gene involves in neuroprotective activity (UniProt, 2011). It was thought to be related to prion pathogenesis (Premzi *et al.*, 2003). SPRN is mainly expressed in brain tissue and is the first target of prion infections (Ubaldi *et al.*, 2006). The mutations in the gene were already annotated to cause Creutzfeldt-Jakob disease in humans. Moreover, there have been studies to examine the relation of the gene with diseases in ruminants (Beck *et al.*, 2008). However, Lampo *et al.* (2009) could not find any association between the gene and the scrapie although they recorded the mutations in the

ovine SPRN gene. In another experiment, the gene was found more expressed in cerebrum than cerebellum. Gurgul *et al.* (2012) compared the protein-coding sequences of SPRN gene in bovine spongiform encephalopathy (BSE) cases (the protease-resistant core of lower and higher molecular mass) with a control group of the Holstein-Friesian breed. They came through a rare variation of SPRN in the lower type of the disease.

Zhao *et al.* (2012a) hypothesized that the differences in the expression of SPRN might be associated with differences which are specific for that species. For that aim, they compared the gene expression between cattle and buffalo which revealed higher expression levels in buffalo than cattle. For cattle, also, the most expression was found in obex rather than cerebrum and cerebellum.

5.2.5. AGRP

Our experiment recorded the AGRP gene differentially expressed in the brain which has interaction with other DEGs, as well. The gene encodes agouti related neuropeptide which is specifically synthesised in neuropeptide Y-containing cells in the hypothalamus (Stelzer *et al.*, 2016). The protein takes a role in various processes such as feeding-eating behaviour, response to insulin and neuropeptide signalling pathway (UniProt, 2011). There is little information about bovine AGRP. However, previous studies have shown the gene was up-regulated in the case of food restriction and lactation in sheep (Roche *et al.*, 2008). The other study with mice also revealed the increase of voluntary feed intake (Kim *et al.*, 2000a). Harrison *et al.* (2007) have shown the orexigenic effect of AGRP in cattle.

5.2.6. CRH

CRH encodes corticotropin-releasing hormone which mainly plays a role in stress responses (UniProt, 2011). The gene, however, involves in many biological processes such as the development of lung and adrenal gland, regulation of cell death and blood pressure or ion homeostasis (Stelzer *et al.*, 2016). We found the gene differentially expressed in brain tissue. However, it was recorded highly expressed in other tissues as well by other studies. For example, Wibowo *et al.* (2008) defined the gene highly associated with a backfat thickness in Wagyu x Limousin cattle population. The other study with mice revealed the over-expression of the gene cause muscle wasting, decreased linear growth and obesity (Stenzel-Poore *et al.*, 1992). Hudson *et al.* (2013) found the gene having an important role in muscle development. Kulig *et al.* (2011) also identified the gene highly expressed in hypothalamus although the expression found in endometrium, liver, and epithelial tissues.

The SNPs of the gene (CRH A145G and C240G) were also targeted to find their functions. CRH-A145G was considered the potential polymorphism to increase milk production traits in Jersey cows (Kulig *et al.*, 2011).

5.3. ADIPOSE-SPECIFIC GENES

5.3.1. HSPA8

This gene encodes a member of the heat shock protein-70 (Hsp70) family named 70kDa heat shock protein (UniProt, 2011). The gene mostly involves in the regulatory processes such as mRNA stability, protein stability, cell cycle and cellular response to heat (Stelzer *et al.*, 2016). Although it was found differentially expressed in adipose tissue after our experiment, other studies have recorded the high expression in muscle tissue. The association between the gene and beef quality was investigated by Hocquette *et al.* (2012). Genes which belong to heat shock protein family including HSPA8 was correlated with initial and overall tenderness scores in the reference group. In another study, Gessner *et al.* (2014) determined the expression of HSPA8 be associated with DNA damage, DNA repair, and cell cycle in the liver of Holstein cows.

5.3.2. ATP6V0D2

ATP6V0D2 is a protein-coding gene which was differentially expressed in adipose tissue. Among its biological processes ion transport, phagosome acidification and ATP hydrolysis are the most important (UniProt, 2011). The annotation of the gene is mostly from model organisms. A study with mice revealed the differential expression of the gene in adipose tissue (Hoggard *et al.*, 2009). Fujimoto *et al.* (2011) were also aiming to find up- and down-regulated genes in adipose tissue in diabetes and found ATP6V0D2 up-regulated more in the insulin resistant/diabetic mice compared to non-diabetic mice. The gene was also found differentially expressed in visceral fat of human (Takeda *et al.*, 2016). Zambonelli *et al.* (2016) were another group of scientists who find the gene differentially expressed in the back fat tissue of pigs between fat and lean animals. The bovine study which found the gene differentially expressed used calving interval to identify cows with good genetic merit for fertility compared to poor genetic merit animals (Moran *et al.*, 2015). They found the gene down-regulated in the endometrium of good genetic merit for fertility holder cows (Moran *et al.*, 2015).

5.3.3. PHB2

PHB2 encodes prohibitin-2 protein which has mediator function in the transcriptional repression by nuclear hormone receptors (UniProt, 2011). The protein is secreted from adipocytes and is involved in mitochondrial biogenesis and function (Stelzer *et al.*, 2016). The purpose of the protein in the adipose tissue is to target binding partners with mitochondria (UniProt, 2011). There are recent studies (Hossen *et al.*, 2010) with model organisms which show the role of PHB2 to modulate 17- β -Estradiol-induced gene transcription. It can be therefore concluded that the gene expression may be regulated by 17- β -Estradiol. PHB2 was defined in mouse liver as the deletion of the gene cause spontaneous liver injury, increased fat deposition and immune cell infiltration. Hence, it may be concluded that PHB is essential for metabolic and immune homeostasis of liver. Park *et al.* (2005b) observed obesity development in the female PHB2 transgenic mice which can be thought as the loss of repressive function of the gene on oestrogen in the liver that is vital for adipose tissue homeostasis. Ande *et al.* (2016) showed that PHB2 plays a role in the regulation of sex differences in adipose and immune functions.

5.3.4. SELE

SELE encodes E-selectin protein which is expressed only by cytokines on endothelial cells for cell adhesion (UniProt, 2011). The main role of the protein is for inflammation such as leukocyte migration, leukocyte cell-cell adhesion, and leukocyte tethering or rolling (Stelzer *et al.*, 2016). Ekstrom *et al.* (2010) recorded 100-fold increase of the SELE gene in mRNA expression in omental adipose tissue. The same group identified the increase in subcutaneous adipose tissue up to 400-fold. In another study, Dolinkova *et al.* (2008) examined humans for the fold changes of the SELE gene expression levels in subcutaneous and visceral adipocytes and whole visceral and subcutaneous adipose tissue from obese relative to normal-weight subjects. Although the fold change was significant for visceral adipocytes, there was no significant fold change for subcutaneous adipocyte, whole subcutaneous adipose tissue or whole visceral adipose tissue.

5.4. ENDOMETRIUM-SPECIFIC GENES

5.4.1. TOP2A

TOP2A gene was one of the differentially expressed genes in the endometrium. Moreover, it was shown to be interacted 78 other genes in the experiment which was among the largest number found. The gene encodes DNA topoisomerase 2-alpha which is an enzyme that plays an important role in controlling and changing the topologic states of DNA (UniProt, 2011). Moreover, the gene involves in other processes including chromosome condensation and separation of chromatid (Stelzer *et al.*, 2016). The gene was shown differentially expressed in the endometrium of mammals. For instance, it was indicated in humans as the marker gene of proliferation in vulvar epithelial tissue (Brustmann and Naude, 2002) as the increase of its expression was recorded in vulvar intraepithelial neoplasias (VINs) and squamous cell carcinoma (SCC) comparing to normal vulvar epithelial (Ntzeros *et al.*, 2014). One of the recent studies related to TOP2A gene in the endometrium of dairy cows was conducted by Ribeiro *et al.* (2016). The gene was found differentially expressed in the regulatory analysis for ovoid versus filamentous comparison which was classified based on morphology. There are also studies with hormonal effect on endometrial gene expression in cattle available. Forde *et al.* (2011) compared the progesterone treatment on the tissue samples taken from single and multiple ovulated pregnant heifers. TOP2A was found down-regulated in super-ovulated endometria. In another study, Shimizu *et al.* (2010) analysed oestradiol and progesterone on endometrial gene expression profile. Their result also supported the idea that the gene has an important function in the tissue.

5.4.2. VEGFA-FLT1

VEGFA gene was also found as both differentially expressed and highly interacted in our experiment. Vascular endothelial growth factor A (VEGF-A) protein was encoded by the gene that has functions in angiogenesis, vasculogenesis, and endometrial cell growth (UniProt, 2011). FLT1 gene has been shown to interact with VEGFA (Gram *et al.*, 2015). Vascular endothelial growth factor receptor 1 protein is encoded by the FLT1 gene. Hence, the roles of the genes can be categorized in two main titles which are maintaining the development of capillaries/blood vessels and growth factor of controlling the angiogenesis (Shirasuna *et al.*, 2012). The bovine corpus luteum is highly vascularised organ where VEGF-A protein is produced in high quantities. Therefore, progesterone secretion (Kobayashi *et al.*, 2001) and the degree of endothelial cell network (Robinson *et al.*, 2008) is

stimulated by it. Shirasuna *et al.* (2012) have also reported the decreased progesterone secretion just after VEGFA injection in cows. Gram *et al.* (2015) investigated the expression of the gene in dog corpus luteum and uteroplacental compartments during pregnancy. The experiment reported that VEGFA was expressed significantly in uteroplacental units. However, another study did not find differential expression of FLT1 for morphology alterations of corpus luteum in cows which investigated the association with progesterone concentration.

5.4.3. AMD1

AMD1 encodes adenosylmethionine decarboxylase-1 protein which is an important intermediate enzyme for biosynthesis of polyamine (UniProt, 2011). The other function of the protein is promoting maintenance and self-renewal of embryonic stem cells due to control spermine levels (Stelzer *et al.*, 2016). The gene was found differentially expressed in the endometrium of cows according to several studies. Waters *et al.* (2012) found the gene when they checked the association of the gene expression in endometrium with n-3 PUFA supplementation which is defined as advantage supplier for fertility. In another study, Mesquita *et al.* (2014) examined the changes in the gene expression profile applying progesterone in different concentrations. AMD1 abundance was reported with negative correlation with the difference concentrations of progesterone. Therefore, the possible inhibitory effect of progesterone on the gene can be suggested to reduce the synthesis of spermidine and spermine. This may alter the DNA methylation process (Ramos *et al.*, 2014). Shimizu *et al.* (2010) also reported the gene differentially expressed in their experiment which was comparing effects of steroid hormone treatments on the bovine endometrium.

5.4.4. IL12A

IL12A encodes a subunit protein of cytokine interleukin-12 which operates T and natural killer cells (UniProt, 2011). The gene involves in several biological processes such as cell migration, cellular response to lipopolysaccharide and virus, defence against gram-positive bacterium and protozoa and positive regulation of immune cells (Stelzer *et al.*, 2016). As the gene has a function for immune response, it is normal that the gene is found in tissues where pathogens are abundant (Dixon *et al.*, 2015). Wang *et al.* (2012) discovered the differential expression of the gene in mammary tissue of the cows at 30 d postpartum. There were also other researchers who found the gene differentially expressed in endometrium tissue. Oliveria *et al.* (2013) found temporally regulation of the gene during the oestrous cycle. Moreover, temporally expression was recorded during pregnancy, as well. Therefore it

is possible to conclude the endometrial immune profile responds to alteration which is experienced. LeBlanc *et al.* (2011) suggested the association of the gene with severe uterine inflammation. In another study with early postpartum animals, Chapwanya *et al.* (2009) observed the increase of the gene expression compared to late postpartum animals. Killeen *et al.* (2014) came up with the result that the gene was down-regulated during the mid-luteal phase of the estrous cycle in high fertile heifers versus low fertile ones.

5.5. MUSCLE-SPECIFIC GENES

5.5.1. CSNK2A1

CSNK2A1 (Casein Kinase 2 Alpha 1) is a protein-coding gene whose product is the catalytic subunit of a constitutively active serine/threonine-protein kinase complex (UniProt, 2011). The function of the gene is regulating numerous cellular processes, such as cell-cycle progression, apoptosis, and transcription, as well as viral infection (Stelzer *et al.*, 2016). In our study, this gene was differentially expressed in muscle tissue. Hamill *et al.* (2012) found that CSNK2A1 was in the category of cellular function and maintenance of most significantly expressed genes in relation to intramuscular fat. The relation of these results may also show the experimental failure of taking a deep-enough samples.

5.5.2. HDAC5

HDAC5 is an epigenetic-related gene (Liu *et al.*, 2015b), coding the enzyme named histone deacetylase-5 which is responsible for transcriptional regulation, cell cycle progression, and developmental events (Stelzer *et al.*, 2016). Histone deacetylases belong to five distinct categories and mostly involve in muscle growth and development by repressing transcription of myocyte enhancer MEF2C (Martin *et al.*, 2009). However, Hudson *et al.* (2013) showed that HDAC5 had a prominent role in differentiated muscle. In contrast, another study with Snow Dragon Beef population revealed SNPs in HDAC5 did not have a significant association with carcass traits (Liu *et al.*, 2015b).

5.5.3. TFB1M

One of the differentially expressed genes in muscle tissue was TFB1M which also interacted quite a lot with other genes. TFB1M gene encodes a mitochondrial enzyme named Transcription factor B1, mitochondrial (UniProt, 2011). The same gene was also remarked in economically important traits study of beef cattle by Jiang *et al.* (2009) who discovered that TFB1M was one of the differentially expressed genes which play a role in tenderness and juiciness of the meat. However, the mechanism of this effect remains unknown.

5.5.4. ACTB

ACTB encodes six different actin proteins which are highly conserved and involves in cell motility, structure, and integrity. β -Actin is a major component of the contractile apparatus and one of the two nonmuscle cytoskeletal actins. Moran *et al.* (2015) revealed the relation of ACTB upregulated β -Actin protein in cytoskeleton with actin & myosin-formed dense bodies which might show the association of cytoskeleton with contractile machinery. Moreover, a compensatory growth study (Keogh *et al.*, 2016) also defined ACTB as differentially expressed gene of muscle tissue for cell migration interaction which was already identified as a potential biomarker for the selection of compensatory growth by Connor *et al.* (2010).

5.5.5. ARPC5- ARPC1B

These are the two actin-related (Arp2/3) protein-coding genes found differentially expressed in muscle tissue. Their proteins involve in regulation of actin polymerization process and format actin networks together with an activating nucleation-promoting factor (UniProt, 2011). The study of Keogh *et al.*, (2016) supports our result as it also showed these genes as differentially expressed in *M. longissimus dorsi* of Holstein Friesian bulls following a 15-day compensatory growth and re-alimentation period in Period 2, relative to a 120 day period of dietary restriction (Period 1).

5.5.6. RCAN1

RCAN1 encodes the regulator of calcineurin-1 protein which inhibits calcineurin-dependent signaling pathways together with calcineurin. The gene in human has a role in nervous system development and is associated with Down syndrome and mixed malaria diseases (Stelzer *et al.*, 2016). However, we found the gene differentially expressed in muscle tissue. Moreover, it was shown to be involved in an economically important trait for carcass measurement (Jiang *et al.*, 2009). The gene was found to have and additive effects on carcass weight (CW) and kidney, pelvic and heart fat (KPH) (Hu *et al.*, 2007). The phenotypic measurements for eating quality and fatty acid composition showed that gene effects on taste panel connective tissue (TPCT), and polyunsaturated fatty acids (PUFA), respectively (Nafikov and Beitz, 2007). Dodson *et al.* (2010) also found RCAN1 in functional genes associated with KPS in their study with Wagyu x Limousin cattle population. In the experiment with Angus cattle, Zhao *et al.* (2012b) found the gene involved in beef tenderness which was induced by acute stress.

5.6. SNP ANALYSIS

SNPs are essential in the genome due to their capacity to give information about disease risk or resistance, drug efficiency on animal and most importantly phenotypic variations. SNPs are thought to be the biggest cause of genetic diseases (Pritchard *et al.*, 2002). The application of SNPs in livestock is mostly for genome-wide association studies and genomic selection of economically important traits such as meat and milk production (Ly *et al.*, 2013).

It is very clear that all genes contribute to various traits somehow; however, sometimes this is in such small quantities that should be neglected. In this study, we observed polymorphism of some tissue-specific genes which are involved in tissue-specific functions. The polymorphism in the gene may lead some superiority such as economically desired and disease resistant animals or may be associated with the trait. Selecting animals based on their genomic breeding value may result in highly accurate phenotypes (Ly *et al.*, 2013). The SNPs application has been increasing for dairy cattle selection. However, the use in beef cattle is not as common as for dairy production (Ly *et al.*, 2013).

SNPs have an impact on gene expression, mRNA stability, and subcellular localization of mRNA and proteins which cause disease (Wang *et al.*, 2008). Defining the SNPs of a gene, therefore, is crucial to better understand the nature of genetic diseases. SNP markers can be used for medical test and offer medication for individuals (Shastry, 2009).

5.6.1. BIOMARKERS

Biomarkers are used to detect specific gene variations such as; deletions, insertions, duplications and mutations, which have been shown to be associated with certain characteristics (Silber, 2001). Identifying a large number of SNPs at gene level has been possible with the recent developments. It is clear that molecular markers are superior to conventional tools such as progeny test and various selection programs that need a long time (Avisé, 2012). Several types of biomarkers were used in cattle production. The biomarkers were applied to improve milk quality and production, disease resistance, conservation and biodiversity, thermo-tolerant breeds, fertility, etc. (Singh *et al.*, 2014). The SNP counts of molecular markers used to detect cattle genetic traits, which were also found tissue-specific in the current study, were shown in Figure 32.

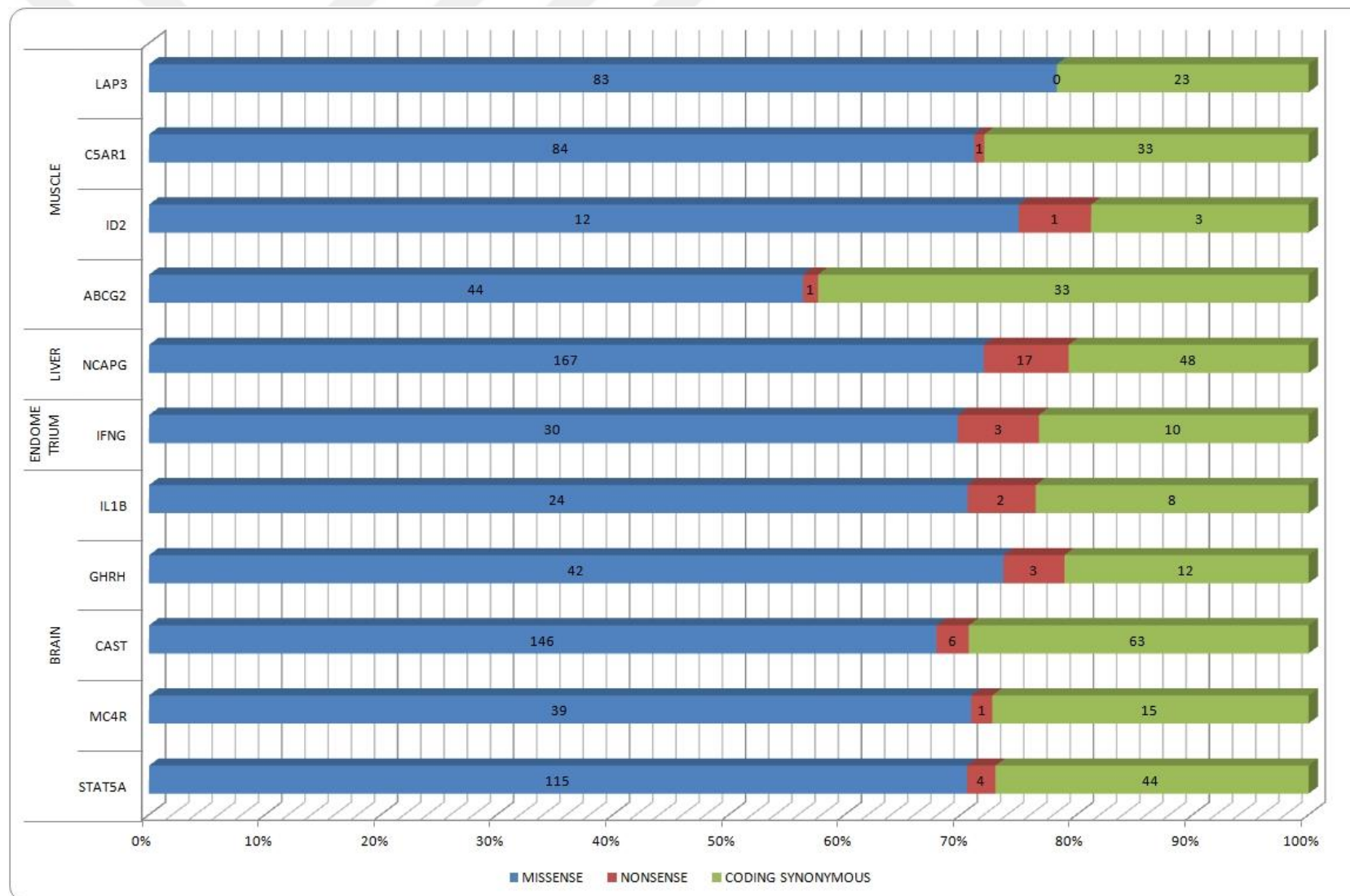


Figure 32. The percentage of SNP annotations of biomarkers used to detect cattle genetic traits. CYP11B1, PRL, TG and NME genes could not be plotted as their SNP counts were not available.

5.6.1.1. PRL

PRL gene encodes prolactin hormone which plays various significant roles in the bovine especially in dairy cows for milk production (Dybus, 2002). Prolactin is secreted by the pituitary gland in return for pulses in eating, mating, oestrogen treatment and ovulation. The gene was found endometrium-specific in the current study. Synonymous A/G mutation in amino acid 103 (Lewin *et al.*, 1992), and C/T on exon 3 (Madeja *et al.*, 2004) form *RsaI* and *HphI* restrictions, respectively. These SNPs of the gene were found to influence milk production performance (He *et al.*, 2006) and milk fat percentage (Dybus, 2002), therefore, used as bovine markers.

5.6.1.2. ABCG2

ABCG2 gene encodes ATP-binding cassette sub-family G member 2 protein which was found muscle-specific in the current study. However, polymorphism of the gene was found associated with milk production traits in several studies (Cohen-Zinder *et al.*, 2005; Ron *et al.*, 2006; Olsen *et al.*, 2007). Milk yield and composition can be regulated by the gene (Blott *et al.*, 2003; Viitala *et al.*, 2006, Olsen *et al.*, 2007). Pryce *et al.* (2010) identified the SNPs of the gene on chromosome 6 which may have a positive effect on milk composition.

5.6.1.3. TG

TG gene encodes thyroglobulin protein which is the precursors of the thyroid hormones. Thyroid hormone regulates the metabolism and has significant effects on adipocyte growth, differentiation, and homeostasis of fat depots (Casas *et al.* 2005). TG gene was identified endometrium-specific in the current study. It is used commonly in marker-assisted selection (MAS) programs to improve marbling level and beef quality as it is related to intramuscular fat (Pannier *et al.*, 2010; Hou *et al.*, 2011). Moreover, it was found associated with milk production traits (Anton *et al.*, 2008). Recently, Gan *et al.* (2008) identified 6 novel TG-gene-specific SNPs (at positions 110 (A110T), 133 (G133C), 156 (G156A), 220 (C220T), 351 (A351G), and 506 (A506C) within the 3' flanking region of the TG gene). Their result indicates that the SNP markers G133C, G156A, C220T and A506C were significantly associated with marbling score ($P < 0.05$, $N = 271$).

5.6.1.4. STAT5A

STAT5A gene encodes signal transducer and activator of transcription 5A which is one of the STAT family proteins regulating cytokine signaling pathways (UniProt, 2011). In the current study, the gene was found to be brain-specific. However, Watson *et al.* (2001) identified in mammary gland tissue which plays a role in regulating milk protein expression and affecting mammary gland phenotype by interacting with other genes (Brym *et al.*, 2004; Khatib *et al.*, 2008). The gene was had been already identified as a bovine marker associated with milk composition and mastitis traits (Brym *et al.*, 2004, Ogorevc *et al.*, 2009). Khatib *et al.* (2008) aimed to analyze the association of the STAT5A-gene-specific SNPs with economic traits. They found that G/C variation in exon-8 caused to decrease in milk protein and fat contents. Moreover, several variants in introns were found to be highly associated with embryonic lethality and fertilization success in cattle (Khatib *et al.*, 2008).

5.6.1.5. MC4R

MC4R gene encodes melanocortin-4 receptor protein which plays a role in the regulation of body composition and insulin activity. The gene is expressed in the brain like found in the current study and predominantly in the hypothalamus (Seeley *et al.*, 1997) to regulate feed intake and energy balance (Ibeagha-Awemu *et al.*, 2008). The gene was identified in many livestock species as a biomarker for production traits (Zhang *et al.*, 2009; Liu *et al.*, 2010; Davoli *et al.*, 2012). Kim *et al.* (2000b) defined that Asp298Asn SNP variant in pigs was associated with feed intake, fatness and growth traits. Huang *et al.* (2010) also suggested the same traits-association with the MC4R gene polymorphism in cattle breeds, although they failed to show a direct relation to these traits of two SNPs of the gene (SNP G1069C and SNP T83C). However, Liu *et al.* (2010) compared SNP markers of 129A>G and 1069C>G and reported that cows having genotypes AG and GG had higher live weight than genotype AA; and cows having the genotype GG had higher live weight, carcass weight and marbling score than genotype CC.

5.6.1.6. CAST

CAST gene encodes calpastatin protein which involves in several biological processes such as aging, myoblast fusion, and differentiation, liver and brain development (Stelzer *et al.*, 2016). In the current study, the gene was found brain-specific. However, variations of the gene have been found in many studies (Schenkel *et al.*, 2006; Barendse *et al.*, 2008; Niciura *et al.*, 2012) associated with meat production traits. Moreover, the effect of the gene polymorphisms for meat tenderness was studied in pig (Ciobanu *et al.*, 2004) and cattle

(Barendse *et al.*, 2007a). Barendse *et al.* (2007b) compared the effect cattle SNPs on the growth and meat quality traits. Pro52Leu resulted to biggest alteration in hydropathy and also the most significant association with meat tenderness over Ser48Gly, Ala286Thr, and Ala496Val. Moreover, Curi *et al.* (2009) reported that CAST/DdeI polymorphism was related to meat quality of a *Bos indicus* breed, Nellore. Hence, the variants of CAST gene can be used for biomarkers of meat tenderness.

5.6.1.7. Other Genes for Candidate Biomarkers

The genes found brain-specific in current study such as CYP11B1, GHRH, and IL1B were also found to be used as molecular markers in livestock production. CYP11B1 was found associated with milk production traits (Kaupe *et al.*, 2007; Ogorevc *et al.*, 2009); comparison GHRH polymorphism -4241A/T in 5' UTR resulted that TT genotype was significantly associated with cold carcass weight (Franco *et al.*, 2005) and *longissimus* muscle area (Cheong *et al.*, 2006); IL1B was found in study associated with mastitis traits (Ogorevc *et al.*, 2009).

There were also muscle-specific expressed genes which were used as biomarkers in the genetic selection of cattle. These genes are ID2, NME1, C5AR1, and LAP3. ID2 (Miyoshi *et al.*, 2002) and NME1 (Ogorevc *et al.*, 2009) were found to be significant for milk traits; C5AR1 was found in study associated with mastitis traits (Ogorevc *et al.*, 2009); LAP3 was found related to feed intake, gain, meat and carcass traits in beef cattle (Lindholm-Perry *et al.*, 2011). Liver-specific gene, NCAPG, was also detected as a potential biomarker for feed intake and body weight gain phenotypes (Lindholm-Perry *et al.*, 2011). Endometrium-specific gene, IFNG, was found in mastitis expression studies (Chapwanya *et al.*; and Ogorevc *et al.*, 2009) which may be mastitis related gene; therefore, it may be used as a molecular marker in genetic applications of cattle.

6. CONCLUSION

‘omic’ technologies have been intensively applied to better understand the bovine tissues. As a result, a large volume of data has been produced from single tissues. There are also a few multi-tissue studies of bovine in literature. However, these studies have analyzed the data generated within the limited number of variables, such as same breed, same sex or similar conditions for each animal. This experiment collected the RNA-Seq data from several studies regardless of breeds, sex, age, health, nutrition or other factors. In the end of the study, tissue-specific genes were found in functionally and economically important bovine tissues such as adipose, brain, endometrium, muscle and liver. Among these tissues; the largest numbers of tissue-specific genes were discovered in the brain, while adipose-specific genes were the least. Based on these results, it can be suggested that smaller number of samples for brain tissue may have resulted in an inflated number brain-specific genes.

Bioinformatics, used in the study, was limited by the small number of tissue samples collected from studies. Potentially, the sample diversity may result in lower accuracy in identifying tissue-specific genes. As a nature of living organisms, genes interact with each other and are under the influence of both biotic and abiotic factors. Single tissue-specific studies, therefore, are unlikely to be representative of the whole. This study has provided identification of signatures of tissue-specific genes in bovine by using the data produced by various studies around the world.

One of the limitations of the study was the bias of data collection. Some tissue samples may contain other tissue fractions (Keady *et al.*, 2013). Additionally, various types of each tissue were assumed as same, for instance; omental, intramuscular and subcutaneous fat for adipose tissue or pituitary gland and hypothalamus for brain tissue.

Future research related to the results of this experiment may be questioning the functions of the genes which were shown to be differentially expressed commonly in specific tissues but not in others. For instance, those which were differentially expressed both in adipose and muscle tissues could be targeted for livestock studies of economic traits. As both of the tissues are the most important for beef production. Moreover, detailed research can be done for 115 genes that were found differentially expressed in all five tissues with the data from the studies all around the world. The findings of this project may elucidate housekeeping genes which could be applied to calibrate global expression projects as reference genes.

The current study also analysed the SNP counts of some highly tissue-specific genes. However, variants in these genes are the total amount of all studied cow breeds. Screening the polymorphisms with big effects on performance in selected cattle breed with a large number of animals can be a continuous project of the current study that can indicate population frequency and phenotype data thus improve understanding the functional importance of genomic variants.



Word Count: 16,936

7. REFERENCES

- Afgan, E, Baker, D, van den Beek, M, Blankenberg, D, Bouvier, D, Čech, M, Chilton, J, Clements, D, Coraor, N & Eberhard, C 2016, 'The Galaxy platform for accessible, reproducible and collaborative biomedical analyses: 2016 update', *Nucleic acids research*, p. gkw343.
- Alam, T, Kenny, DA, Sweeney, T, Buckley, F, Prendiville, R, McGee, M & Waters, SM 2012, 'Expression of genes involved in energy homeostasis in the duodenum and liver of Holstein-Friesian and Jersey cows and their F1 hybrid', *Physiological genomics*, vol. 44, no. 2, pp. 198-209.
- Alberts, B, Bray, D, Hopkin, K, Johnson, A, Lewis, J, Raff, M, Roberts, K & Walter, P 2009, 'Chapter 8: Control of Gene Expression', *Essential cell biology*, Garland Science. http://www.garlandscience.com/res/pdf/9780815341291_ch08.pdf.
- Ande, SR, Nguyen, KH, Nyomba, BLG & Mishra, S 2016, 'Prohibitin in adipose and immune functions', *Trends in Endocrinology & Metabolism*, vol. 27, no. 8, pp. 531-41.
- Anders, S & Huber, W 2010, 'Differential expression analysis for sequence count data', *Genome biology*, vol. 11, no. 10, p. 1.
- Andersen, MC, Engström, PG, Lithwick, S, Arenillas, D, Eriksson, P, Lenhard, B, Wasserman, WW & Odeberg, J 2008, 'In silico detection of sequence variations modifying transcriptional regulation', *PLoS Comput Biol*, vol. 4, no. 1, p. e5.
- Andrews, S 2010, 'FastQC: A quality control tool for high throughput sequence data', *Reference Source*.
- Anton, I, Kovács, K, Fésüs, L, Várhegyi, J, Lehel, L, Hajda, Z, Polgar, J, Szabó, F & Zsolnai, A 2008, 'Effect of DGAT1 and TG gene polymorphisms on intramuscular fat and on milk production traits in different cattle breeds in Hungary', *Acta Veterinaria Hungarica*, vol. 56, no. 2, pp. 181-6.
- Ashburner, M, Ball, CA, Blake, JA, Botstein, D, Butler, H, Cherry, JM, Davis, AP, Dolinski, K, Dwight, SS & Eppig, JT 2000, 'Gene Ontology: tool for the unification of biology', *Nature genetics*, vol. 25, no. 1, pp. 25-9.
- Avise, JC 2012, *Molecular markers, natural history and evolution*, Springer Science & Business Media.
- Baik, M, Etchebarne, BE, Bong, J & VandeHaar, MJ 2009, 'Gene expression profiling of liver and mammary tissues of lactating dairy cows', *Asian Austral J Animal Sci*, vol. 6, pp. 871-84.

- Barendse, W, Harrison, BE, Bunch, RJ & Thomas, MB 2008, 'Variation at the Calpain 3 gene is associated with meat tenderness in zebu and composite breeds of cattle', *BMC genetics*, vol. 9, no. 1, p. 1.
- Barendse, W, Harrison, BE, Hawken, RJ, Ferguson, DM, Thompson, JM, Thomas, MB & Bunch, RJ 2007a, 'Epistasis between calpain 1 and its inhibitor calpastatin within breeds of cattle', *Genetics*, vol. 176, no. 4, pp. 2601-10.
- Barendse, W, Reverter, A, Bunch, RJ, Harrison, BE, Barris, W & Thomas, MB 2007b, 'A validated whole-genome association study of efficient food conversion in cattle', *Genetics*, vol. 176, no. 3, pp. 1893-905.
- Barrett, T, Troup, DB, Wilhite, SE, Ledoux, P, Rudnev, D, Evangelista, C, Kim, IF, Soboleva, A, Tomashevsky, M & Marshall, KA 2009, 'NCBI GEO: archive for high-throughput functional genomic data', *Nucleic acids research*, vol. 37, no. suppl 1, pp. D885-D90.
- Beck, JA, Campbell, TA, Adamson, G, Poulter, M, Uphill, JB, Molou, E, Collinge, J & Mead, S 2008, 'Association of a null allele of SPRN with variant Creutzfeldt–Jakob disease', *Journal of medical genetics*, vol. 45, no. 12, pp. 813-7.
- Besnard, V, Wert, SE, Hull, WM & Whitsett, JA 2004, 'Immunohistochemical localization of Foxa1 and Foxa2 in mouse embryos and adult tissues', *Gene Expression Patterns*, vol. 5, no. 2, pp. 193-208.
- Bionaz, M, Baumrucker, CR, Shirk, E, Heuvel, JPV, Block, E & Varga, GA 2008, 'Short communication: characterization of Madin-Darby bovine kidney cell line for peroxisome proliferator-activated receptors: temporal response and sensitivity to fatty acids', *Journal of Dairy Science*, vol. 91, no. 7, pp. 2808-13.
- Blankenberg, D, Gordon, A, Von Kuster, G, Coraor, N, Taylor, J, Nekrutenko, A & Galaxy, T 2010, 'Manipulation of FASTQ data with Galaxy', *Bioinformatics*, vol. 26, no. 14, pp. 1783-5.
- Blott, S, Kim, J-J, Moisisio, S, Schmidt-Küntzel, A, Cornet, A, Berzi, P, Cambisano, N, Ford, C, Grisart, B & Johnson, D 2003, 'Molecular dissection of a quantitative trait locus: a phenylalanine-to-tyrosine substitution in the transmembrane domain of the bovine growth hormone receptor is associated with a major effect on milk yield and composition', *Genetics*, vol. 163, no. 1, pp. 253-66.
- Blum, JW, Elsasser, TH, Greger, DL, Wittenberg, S, De Vries, F & Distl, O 2007, 'Insulin-like growth factor type-1 receptor down-regulation associated with dwarfism in Holstein calves', *Domestic animal endocrinology*, vol. 33, no. 3, pp. 245-68.

- Brookes, AJ 1999, 'The essence of SNPs', *Gene*, vol. 234, no. 2, pp. 177-86.
- Brustmann, H & Naudé, S 2002, 'Expression of topoisomerase II α , Ki-67, proliferating cell nuclear antigen, p53, and argyrophilic nucleolar organizer regions in vulvar squamous lesions', *Gynecologic oncology*, vol. 86, no. 2, pp. 192-9.
- Brym, P, Kamiński, S & Wójcik, E 2004, 'Nucleotide sequence polymorphism within exon 4 of the bovine prolactin gene and its associations with milk performance traits', *Journal of Applied Genetics*, vol. 46, no. 2, pp. 179-85.
- Cantiello, M, Carletti, M, Dacasto, M, Martin, PGP, Pineau, T, Capolongo, F, Gardini, G & Nebbia, C 2008, 'Cytochrome P450 inhibition profile in liver of veal calves administered a combination of 17 β -estradiol, clenbuterol, and dexamethasone for growth-promoting purposes', *Food and chemical toxicology*, vol. 46, no. 8, pp. 2849-55.
- Capasso, M, Diskin, S, Cimmino, F, Acierno, G, Totaro, F, Petrosino, G, Pezone, L, Diamond, M, McDaniel, L & Hakonarson, H 2014, 'Common genetic variants in NEFL influence gene expression and neuroblastoma risk', *Cancer research*, vol. 74, no. 23, pp. 6913-24.
- Cariaso, M & Lennon, G 2012, 'SNPedia: a wiki supporting personal genome annotation, interpretation and analysis', *Nucleic acids research*, vol. 40, no. D1, pp. D1308-D12.
- Casas, E, White, SN, Riley, DG, Smith, TPL, Brenneiman, RA, Olson, TA, Johnson, DD, Coleman, SW, Bennett, GL & Chase, CC 2005, 'Assessment of single nucleotide polymorphisms in genes residing on chromosomes 14 and 29 for association with carcass composition traits in cattle', *Journal of animal science*, vol. 83, no. 1, pp. 13-9.
- Ceglia, L 2008, 'Vitamin D and skeletal muscle tissue and function', *Molecular aspects of medicine*, vol. 29, no. 6, pp. 407-14.
- Chapwanya, A, Meade, KG, Doherty, ML, Callanan, JJ, Mee, JF & O'Farrelly, C 2009, 'Histopathological and molecular evaluation of Holstein-Friesian cows postpartum: toward an improved understanding of uterine innate immunity', *Theriogenology*, vol. 71, no. 9, pp. 1396-407.
- Chen, H, Yao, W, Jin, D, Xia, T, Chen, X, Lei, T, Zhou, L & Yang, Z 2008, 'Cloning, expression pattern, chromosomal localization, and evolution analysis of porcine Gnaq, Gna11, and Gna14', *Biochemical genetics*, vol. 46, no. 7-8, pp. 398-405.
- Cheong, HS, Yoon, D-H, Kim, LH, Park, BL, Choi, YH, Chung, ER, Cho, YM, Park, EW, Cheong, I-C & Oh, S-J 2006, 'Growth hormone-releasing hormone (GHRH)

- polymorphisms associated with carcass traits of meat in Korean cattle', *BMC genetics*, vol. 7, no. 1, p. 1.
- Ciobanu, DC, Bastiaansen, JWM, Lonergan, SM, Thomsen, H, Dekkers, JCM, Plastow, GS & Rothschild, MF 2004, 'New alleles in calpastatin gene are associated with meat quality traits in pigs', *Journal of animal science*, vol. 82, no. 10, pp. 2829-39.
- Cohen-Zinder, M, Seroussi, E, Larkin, DM, Loo, JJ, Everts-van der Wind, A, Lee, J-H, Drackley, JK, Band, MR, Hernandez, AG & Shani, M 2005, 'Identification of a missense mutation in the bovine ABCG2 gene with a major effect on the QTL on chromosome 6 affecting milk yield and composition in Holstein cattle', *Genome Research*, vol. 15, no. 7, pp. 936-44.
- Conesa, A, Madrigal, P, Tarazona, S, Gomez-Cabrero, D, Cervera, A, McPherson, A, Szczesniak, MW, Gaffney, DJ, Elo, LL & Zhang, X 2016, 'A survey of best practices for RNA-seq data analysis', *Genome biology*, vol. 17, no. 1, p. 1.
- Connor, EE, Kahl, S, Elsasser, TH, Parker, JS, Li, RW, Van Tassell, CP, Vi, RLB & Barao, SM 2010, 'Enhanced mitochondrial complex gene function and reduced liver size may mediate improved feed efficiency of beef cattle during compensatory growth', *Functional & integrative genomics*, vol. 10, no. 1, pp. 39-51.
- Consortium, GT 2015, 'The Genotype-Tissue Expression (GTEx) pilot analysis: Multitissue gene regulation in humans', *Science*, vol. 348, no. 6235, pp. 648-60.
- Cook-Deegan, R, Chan, C & Johnson, A 2000, 'World survey of funding for genomics research', *Unpublished paper*. [www.stanford.edu/class/siw198q/websites/genomics/WrldGenomics \\$ SurveyFinalRpt25Sep00. doc](http://www.stanford.edu/class/siw198q/websites/genomics/WrldGenomics%20SurveyFinalRpt25Sep00.doc).
- Costa, RH, Kalinichenko, VV, Holterman, AXL & Wang, X 2003, 'Transcription factors in liver development, differentiation, and regeneration', *Hepatology*, vol. 38, no. 6, pp. 1331-47.
- Curi, RA, Palmieri, DA, Sugisawa, L, Oliveira, HN, Silveira, AC & Lopes, CR 2006, 'Growth and carcass traits associated with GH1/Alu I and POU1F1/Hinf I gene polymorphisms in Zebu and crossbred beef cattle', *Genetics and Molecular Biology*, vol. 29, no. 1, pp. 56-61.
- Cánovas, A, Reverter, A, DeAtley, KL, Ashley, RL, Colgrave, ML, Fortes, MRS, Islas-Trejo, A, Lehnert, S, Porto-Neto, L & Rincón, G 2014, 'Multi-tissue omics analyses reveal molecular regulatory networks for puberty in composite beef cattle', *PloS one*, vol. 9, no. 7, p. e102551.
- Davoli, R, Braglia, S, Valastro, V, Annaratone, C, Comella, M, Zambonelli, P, Nisi, I, Gallo,

- M, Buttazzoni, L & Russo, V 2012, 'Analysis of MC4R polymorphism in Italian Large White and Italian Duroc pigs: Association with carcass traits', *Meat science*, vol. 90, no. 4, pp. 887-92.
- Day, ML & Nogueira, GP 2013, 'Management of age at puberty in beef heifers to optimize efficiency of beef production', *Animal Frontiers*, vol. 3, no. 4, pp. 6-11.
- De Jager, N, Hudson, NJ, Reverter, A, Wang, Y-H, Nagaraj, SH, Cafe, LM, Greenwood, PL, Barnard, RT, Kongsuwan, KP & Dalrymple, BP 2011, 'Chronic exposure to anabolic steroids induces the muscle expression of oxytocin and a more than fifty fold increase in circulating oxytocin in cattle', *Physiological genomics*.
- Degner, JF, Marioni, JC, Pai, AA, Pickrell, JK, Nkadori, E, Gilad, Y & Pritchard, JK 2009, 'Effect of read-mapping biases on detecting allele-specific expression from RNA-sequencing data', *Bioinformatics*, vol. 25, no. 24, pp. 3207-12.
- Directive, C 1996, 'Council Directive 96/23/EC of 29 April 1996 on measures to monitor certain substances and residues thereof in live animals and animal products and repealing Directives 85/358/EEC and 86/469/EEC and Decisions 89/187/EEC and 91/664/EEC', *OJ EC L*, vol. 125, pp. 10-31.
- Diskin, MG & Morris, DG 2008, 'Embryonic and early foetal losses in cattle and other ruminants', *Reproduction in Domestic Animals*, vol. 43, no. s2, pp. 260-7.
- Dixon, KO, der Kooij, SW, Vignali, DAA & Kooten, C 2015, 'Human tolerogenic dendritic cells produce IL-35 in the absence of other IL-12 family members', *European journal of immunology*, vol. 45, no. 6, pp. 1736-47.
- Dodson, MV, Hausman, GJ, Guan, L, Du, M, Rasmussen, TP, Poulos, SP, Mir, P, Bergen, WG, Fernyhough, ME & McFarland, DC 2010, 'Lipid metabolism, adipocyte depot physiology and utilization of meat animals as experimental models for metabolic research', *International journal of biological sciences*, vol. 6, no. 7, pp. 691-9.
- Doelman, J, Cao, H, Purdie, NG, Kim, JJM, Swanson, KC, Osborne, VR, Tey, J, Ali, A, Feng, Z & Karrow, NA 2012, 'Transcript profiling of the ruminant liver indicates a unique program of transcriptional regulation of ketogenic enzymes during food restriction', *Comparative Biochemistry and Physiology Part D: Genomics and Proteomics*, vol. 7, no. 3, pp. 303-10.
- Dolinkova, M, Dostalova, I, Lacinova, Z, Michalský, D, Haluzikova, D, Mraz, M, Kasalický, M & Haluzik, M 2008, 'The endocrine profile of subcutaneous and visceral adipose tissue of obese patients', *Molecular and cellular endocrinology*, vol. 291, no. 1, pp. 63-70.

- Duplus, E & Forest, C 2002, 'Is there a single mechanism for fatty acid regulation of gene transcription?', *Biochemical pharmacology*, vol. 64, no. 5, pp. 893-901.
- Dybus, A 2002, 'Associations of growth hormone (GH) and prolactin (PRL) genes polymorphisms with milk production traits in Polish Black-and-White cattle', *Anim Sci Pap Rep*, vol. 20, no. 4, pp. 203-12.
- Edelman, GM & Gally, JA 2001, 'Degeneracy and complexity in biological systems', *Proceedings of the National Academy of Sciences*, vol. 98, no. 24, pp. 13763-8.
- Ekström, M, Halle, M, Bjessmo, S, Liska, J, Kolak, M, Fisher, R, Eriksson, P & Tornvall, P 2010, 'Systemic inflammation activates the nuclear factor- κ B regulatory pathway in adipose tissue', *American Journal of Physiology-Endocrinology and Metabolism*, vol. 299, no. 2, pp. E234-E40.
- Elgendy, R, Giantin, M, Montesissa, C & Dacasto, M 2016, 'The transcriptome of muscle and liver is responding differently to a combined trenbolone acetate and estradiol implant in cattle', *Steroids*, vol. 106, pp. 1-8.
- FAO, F 2013, 'Statistical Yearbook 2013: World Food and Agriculture', *FAO Food Agric. Organization UN Rome Italy*.
- FAO, Data, GGI, Data, O & Data, U 2014, *Commodity trade statistics database*.
- Foley, C, Chapwanya, A, Callanan, JJ, Whiston, R, Miranda-CasoLuengo, R, Lu, J, Meijer, WG, Lynn, DJ, O'Farrelly, C & Meade, KG 2015, 'Integrated analysis of the local and systemic changes preceding the development of post-partum cytological endometritis', *BMC genomics*, vol. 16, no. 1, p. 1.
- Forde, N, Carter, F, di Francesco, S, Mehta, JP, Garcia-Herreros, M, Gad, A, Tesfaye, D, Hoelker, M, Schellander, K & Lonergan, P 2012, 'Endometrial response of beef heifers on day 7 following insemination to supraphysiological concentrations of progesterone associated with superovulation', *Physiological genomics*, vol. 44, no. 22, pp. 1107-15.
- Forde, N, Carter, F, Spencer, TE, Bazer, FW, Sandra, O, Mansouri-Attia, N, Okumu, LA, McGettigan, PA, Mehta, JP & McBride, R 2011, 'Conceptus-induced changes in the endometrial transcriptome: how soon does the cow know she is pregnant?', *Biology of Reproduction*, vol. 85, no. 1, pp. 144-56.
- Franco, MM, Antunes, RC, Silva, HD & Goulart, LR 2005, 'Association of PIT1, GH and GHRH polymorphisms with performance and carcass traits in Landrace pigs', *J. Appl. Genet*, vol. 46, no. 2, pp. 195-200.
- Friedman, JR & Kaestner, KH 2006, 'The Foxa family of transcription factors in development

- and metabolism', *Cellular and Molecular Life Sciences CMLS*, vol. 63, no. 19-20, pp. 2317-28.
- Fujimoto, S, Goda, T & Mochizuki, K 2011, 'In vivo evidence of enhanced di-methylation of histone H3 K4 on upregulated genes in adipose tissue of diabetic db/db mice', *Biochemical and biophysical research communications*, vol. 404, no. 1, pp. 223-7.
- Gan, Q-F, Zhang, L-P, Li, J-Y, Hou, G-Y, Gao, X, Ren, H-Y, Chen, J-B & Xu, S-Z 2008, 'Association analysis of thyroglobulin gene variants with carcass and meat quality traits in beef cattle', *Journal of Applied Genetics*, vol. 49, no. 3, pp. 251-5.
- Gao, N, LeLay, J, Vatamaniuk, MZ, Rieck, S, Friedman, JR & Kaestner, KH 2008, 'Dynamic regulation of Pdx1 enhancers by Foxa1 and Foxa2 is essential for pancreas development', *Genes & development*, vol. 22, no. 24, pp. 3435-48.
- Garber, M, Grabherr, MG, Guttman, M & Trapnell, C 2011, 'Computational methods for transcriptome annotation and quantification using RNA-seq', *Nature methods*, vol. 8, no. 6, pp. 469-77.
- Gessner, DK, Schlegel, G, Ringseis, R, Schwarz, FJ & Eder, K 2014, 'Up-regulation of endoplasmic reticulum stress induced genes of the unfolded protein response in the liver of periparturient dairy cows', *BMC veterinary research*, vol. 10, no. 1, p. 1.
- Getzenberg, RH 1994, 'Nuclear matrix and the regulation of gene expression: tissue specificity', *Journal of cellular biochemistry*, vol. 55, no. 1, pp. 22-31.
- Giantin, M, Carletti, M, Capolongo, F, Pegolo, S, Lopparelli, RM, Gusson, F, Nebbia, C, Cantiello, M, Martin, P & Pineau, T 2008, 'Effect of breed upon cytochromes P450 and phase II enzyme expression in cattle liver', *Drug Metabolism and Disposition*, vol. 36, no. 5, pp. 885-93.
- Giantin, M, Lopparelli, RM, Zancanella, V, Martin, PG, Polizzi, A, Gallina, G, Gottardo, F, Montesissa, C, Ravarotto, L & Pineau, T 2009, 'Effects of illicit dexamethasone upon hepatic drug metabolizing enzymes and related transcription factors mRNAs and their potential use as biomarkers in cattle', *Journal of agricultural and food chemistry*, vol. 58, no. 2, pp. 1342-9.
- Gilbert, JA, Field, D, Huang, Y, Edwards, R, Li, W, Gilna, P & Joint, I 2008, 'Detection of large numbers of novel sequences in the metatranscriptomes of complex marine microbial communities', *PloS one*, vol. 3, no. 8, p. e3042.
- Gill, JL, Bishop, SC, McCorquodale, C, Williams, JL & Wiener, P 2009, 'Association of selected SNP with carcass and taste panel assessed meat quality traits in a commercial population of Aberdeen Angus-sired beef cattle', *Genetics Selection Evolution*, vol.

41, no. 1, p. 1.

- Gillies, AR & Lieber, RL 2011, 'Structure and function of the skeletal muscle extracellular matrix', *Muscle & nerve*, vol. 44, no. 3, pp. 318-31.
- Glaus, P, Honkela, A & Rattray, M 2012, 'Identifying differentially expressed transcripts from RNA-seq data with biological variation', *Bioinformatics*, vol. 28, no. 13, pp. 1721-8.
- Goecks, J, Nekrutenko, A & Taylor, J 2010, 'Galaxy: a comprehensive approach for supporting accessible, reproducible, and transparent computational research in the life sciences', *Genome biology*, vol. 11, no. 8, p. 1.
- Golden, BL, Garrick, DJ & Benyshek, LL 2009, 'Milestones in beef cattle genetic evaluation', *Journal of animal science*, vol. 87, no. 14_suppl, pp. E3-E10.
- Goncalves, A, Tikhonov, A, Brazma, A & Kapushesky, M 2011, 'A pipeline for RNA-seq data processing and quality assessment', *Bioinformatics*, vol. 27, no. 6, pp. 867-9.
- Gotoh, T, Albrecht, E, Teuscher, F, Kawabata, K, Sakashita, K, Iwamoto, H & Wegner, J 2009, 'Differences in muscle and fat accretion in Japanese Black and European cattle', *Meat Science*, vol. 82, no. 3, pp. 300-8.
- Gómez, E, Caamaño, JN, Corrales, FJ, Díez, C, Correia-Álvarez, E, Martín, D, Trigal, B, Carrocera, S, Mora, MI & Pello-Palma, J 2013, 'Embryonic sex induces differential expression of proteins in bovine uterine fluid', *Journal of proteome research*, vol. 12, no. 3, pp. 1199-210.
- Grala, TM, Kay, JK, Phyn, CVC, Bionaz, M, Walker, CG, Rius, AG, Snell, RG & Roche, JR 2013, 'Reducing milking frequency during nutrient restriction has no effect on the hepatic transcriptome of lactating dairy cattle', *Physiological genomics*.
- Gram, A, Hoffmann, B, Boos, A & Kowalewski, MP 2015, 'Expression and localization of vascular endothelial growth factor A (VEGFA) and its two receptors (VEGFR1/FLT1 and VEGFR2/FLK1/KDR) in the canine corpus luteum and utero-placental compartments during pregnancy and at normal and induced parturition', *General and comparative endocrinology*, vol. 223, pp. 54-65.
- Graugnard, DE, Moyes, KM, Trevisi, E, Khan, MJ, Keisler, D, Drackley, JK, Bertoni, G & Loor, JJ 2013, 'Liver lipid content and inflammometabolic indices in periparturient dairy cows are altered in response to preparturient energy intake and postparturient intramammary inflammatory challenge', *Journal of dairy science*, vol. 96, no. 2, pp. 918-35.
- Gray, CA, Abbey, CA, Beremand, PD, Choi, Y, Farmer, JL, Adelson, DL, Thomas, TL, Bazer, FW & Spencer, TE 2006, 'Identification of endometrial genes regulated by

- early pregnancy, progesterone, and interferon tau in the ovine uterus', *Biology of reproduction*, vol. 74, no. 2, pp. 383-94.
- Greenwood, PL & Cafe, LM 2007, 'Prenatal and pre-weaning growth and nutrition of cattle: long-term consequences for beef production'.
- Hanada, R, Teranishi, H, Pearson, JT, Kurokawa, M, Hosoda, H, Fukushima, N, Fukue, Y, Serino, R, Fujihara, H & Ueta, Y 2004, 'Neuromedin U has a novel anorexigenic effect independent of the leptin signaling pathway', *Nature medicine*, vol. 10, no. 10, pp. 1067-73.
- Hamill, RM, McBryan, J, McGee, C, Mullen, AM, Sweeney, T, Talbot, A, Cairns, MT & Davey, GC 2012, 'Functional analysis of muscle gene expression profiles associated with tenderness and intramuscular fat content in pork', *Meat science*, vol. 92, no. 4, pp. 440-50.
- Hardcastle, TJ & Kelly, KA 2010, 'baySeq: empirical Bayesian methods for identifying differential expression in sequence count data', *BMC bioinformatics*, vol. 11, no. 1, p. 422.
- Hardwick, JP 2008, 'Cytochrome P450 omega hydroxylase (CYP4) function in fatty acid metabolism and metabolic diseases', *Biochemical pharmacology*, vol. 75, no. 12, pp. 2263-75.
- Harhay, GP, Smith, TPL, Alexander, LJ, Haudenschild, CD, Keele, JW, Matukumalli, LK, Schroeder, SG, Van Tassell, CP, Gresham, CR & Bridges, SM 2010, 'An atlas of bovine gene expression reveals novel distinctive tissue characteristics and evidence for improving genome annotation', *Genome biology*, vol. 11, no. 10, p. 1.
- Harrison, JL, Miller, DW, Findlay, PA & Adam, CL 2007, 'Photoperiod influences the central effects of ghrelin on food intake, GH and LH secretion in sheep', *Neuroendocrinology*, vol. 87, no. 3, pp. 182-92.
- He, F, Sun, D, Yu, Y, Wang, Y & Zhang, Y 2006, 'Association between SNPs within prolactin gene and milk performance traits in Holstein dairy cattle', *Asian Australasian Journal Of Animal Sciences*, vol. 19, no. 10, p. 1384.
- Hillman-Jackson, J, Clements, D, Blankenberg, D, Taylor, J, Nekrutenko, A & Team, G 2012, 'Using galaxy to perform large-scale interactive data analyses', *Current protocols in bioinformatics*, pp. 10-5.
- Hisham, MN, Quigley, S, Anderson, S, Phillips, NJ, Loor, JJ & D'Occhio, MJ 2010, 'Liver gene expression in suckled and weaned beef cows', *LIVER*, vol. 7, no. 1, p. 16.
- Hocquette, J-F, Bernard-Capel, C, Vidal, V, Jesson, B, Levéziel, H, Renand, G & Cassar-

- Malek, I 2012, 'The GENOTEND chip: a new tool to analyse gene expression in muscles of beef cattle for beef quality prediction', *BMC Veterinary Research*, vol. 8, no. 1, p. 1.
- Hoggard, N, Cruickshank, M, Moar, K-M, Barrett, P, Bashir, S & Miller, JDB 2009, 'Inhibin β B expression in murine adipose tissue and its regulation by leptin, insulin and dexamethasone', *Journal of molecular endocrinology*, vol. 43, no. 4, pp. 171-7.
- Horak, CE & Snyder, M 2002, 'Global analysis of gene expression in yeast', *Functional & integrative genomics*, vol. 2, no. 4-5, pp. 171-80.
- Hossen, MN, Kajimoto, K, Akita, H, Hyodo, M, Ishitsuka, T & Harashima, H 2010, 'Ligand-based targeted delivery of a peptide modified nanocarrier to endothelial cells in adipose tissue', *Journal of Controlled Release*, vol. 147, no. 2, pp. 261-8.
- Hou, G-Y, Yuan, Z-R, Zhou, H-L, Zhang, L-P, Li, J-Y, Gao, X, Wang, D-J, Gao, H-J & Xu, S-Z 2011, 'Association of thyroglobulin gene variants with carcass and meat quality traits in beef cattle', *Molecular biology reports*, vol. 38, no. 7, pp. 4705-8.
- Hu, Z-L, Fritz, ER & Reecy, JM 2007, 'AnimalQTLdb: a livestock QTL database tool set for positional QTL information mining and beyond', *Nucleic Acids Research*, vol. 35, no. suppl 1, pp. D604-D9.
- Huang, M, Gao, X, Li, JY, Ren, HY, Chen, JB & Xu, SZ 2010, 'Polymorphisms in MC4R gene and correlations with economic traits in cattle', *Molecular biology reports*, vol. 37, no. 8, pp. 3941-4.
- Hudson, NJ, Lyons, RE, Reverter, A, Greenwood, PL & Dalrymple, BP 2013, 'Inferring the *in vivo* cellular program of developing bovine skeletal muscle from expression data', *Gene Expression Patterns*, vol. 13, no. 3, pp. 109-25.
- Hulsegge, I, Woelders, H, Smits, M, Schokker, D, Jiang, L & Sørensen, P 2013, 'Prioritization of candidate genes for cattle reproductive traits, based on protein-protein interactions, gene expression, and text-mining', *Physiological genomics*, vol. 45, no. 10, pp. 400-6.
- Ibeagha-Awemu, EM, Kgwatalala, P & Zhao, X 2008, 'A critical analysis of production-associated DNA polymorphisms in the genes of cattle, goat, sheep, and pig', *Mammalian Genome*, vol. 19, no. 9, pp. 591-617.
- Jackson, TC, Rani, A, Kumar, A & Foster, TC 2009, 'Regional hippocampal differences in AKT survival signaling across the lifespan: implications for CA1 vulnerability with aging', *Cell Death & Differentiation*, vol. 16, no. 3, pp. 439-48.
- Jackson, TC, Verrier, JD, Drabek, T, Janesko-Feldman, K, Gillespie, DG, Uray, T, Dezfulian,

- C, Clark, RS, Bayir, H & Jackson, EK 2013, 'Pharmacological inhibition of pleckstrin homology domain leucine-rich repeat protein phosphatase is neuroprotective: Differential effects on astrocytes', *Journal of Pharmacology and Experimental Therapeutics*, vol. 347, no. 2, pp. 516-28.
- Jackson, TC, Verrier, JD, Semple-Rowland, S, Kumar, A & Foster, TC 2010, 'PHLPP1 splice variants differentially regulate AKT and PKC α signaling in hippocampal neurons: characterization of PHLPP proteins in the adult hippocampus', *Journal of neurochemistry*, vol. 115, no. 4, pp. 941-55.
- Jászberényi, M, Bagosi, Z, Thurzó, B, Földesi, I & Telegdy, G 2007, 'Endocrine and behavioral effects of neuromedin S', *Hormones and behavior*, vol. 52, no. 5, pp. 631-9.
- Jia, H, Saito, K, Aw, W, Takahashi, S, Hanate, M, Hasebe, Y & Kato, H 2013, 'Transcriptional profiling in rats and an ex vivo analysis implicate novel beneficial function of egg shell membrane in liver fibrosis', *Journal of Functional Foods*, vol. 5, no. 4, pp. 1611-9.
- Jiang, Z, Michal, JJ, Chen, J, Daniels, TF, Kunej, T, Garcia, MD, Gaskins, CT, Busboom, JR, Alexander, LJ & Wright Jr, RW 2009, 'Discovery of novel genetic networks associated with 19 economically important traits in beef cattle', *Int J Biol Sci*, vol. 5, no. 6, pp. 528-42.
- Jong, MC, Hofker, MH & Havekes, LM 1999, 'Role of ApoCs in lipoprotein metabolism functional differences between ApoC1, ApoC2, and ApoC3', *Arteriosclerosis, thrombosis, and vascular biology*, vol. 19, no. 3, pp. 472-84.
- Jordanova, A, De Jonghe, P, Boerkoel, CF, Takashima, H, De Vriendt, E, Ceuterick, C, Martin, JJ, Butler, IJ, Mancias, P & Papasozomenos, SC 2003, 'Mutations in the neurofilament light chain gene (NEFL) cause early onset severe Charcot–Marie–Tooth disease', *Brain*, vol. 126, no. 3, pp. 590-7.
- Kapoor, K, Kak, VK & Singh, B 2003, 'Morphology and comparative anatomy of circulus arteriosus cerebri in mammals', *Anatomia, histologia, embryologia*, vol. 32, no. 6, pp. 347-55.
- Kaupe, B, Brandt, H, Prinzenberg, EM & Erhardt, G 2007, 'Joint analysis of the influence of CYP11B1 and DGAT1 genetic variation on milk production, somatic cell score, conformation, reproduction, and productive lifespan in German Holstein cattle', *Journal of animal science*, vol. 85, no. 1, pp. 11-21.
- Keady, SM, Kenny, DA, Ohlendieck, K, Doyle, S, Keane, MG & Waters, SM 2013,

- 'Proteomic profiling of bovine *M. longissimus lumborum* from Crossbred Aberdeen Angus and Belgian Blue sired steers varying in genetic merit for carcass weight', *Journal of animal science*, vol. 91, no. 2, pp. 654-65.
- Keogh, K, Kenny, DA, Cormican, P, McCabe, MS, Kelly, AK & Waters, SM 2016, 'Effect of dietary restriction and subsequent re-alimentation on the transcriptional profile of bovine skeletal muscle', *Plos one*, vol. 11, no. 2, p. e0149373.
- Khan, MJ, Jacometo, CB, Graugnard, DE, Corrêa, MN, Schmitt, E, Cardoso, F & Loor, JJ 2014, 'Overfeeding dairy cattle during late-pregnancy alters hepatic PPAR α -regulated pathways including hepatokines: Impact on metabolism and peripheral insulin sensitivity', *Gene regulation and systems biology*, vol. 8, p. 97.
- Khatib, H, Monson, RL, Schutzkus, V, Kohl, DM, Rosa, GJM & Rutledge, JJ 2008, 'Mutations in the STAT5A gene are associated with embryonic survival and milk composition in cattle', *Journal of dairy science*, vol. 91, no. 2, pp. 784-93.
- Killeen, AP, Morris, DG, Kenny, DA, Mullen, MP, Diskin, MG & Waters, SM 2014, 'Global gene expression in endometrium of high and low fertility heifers during the mid-luteal phase of the estrous cycle', *BMC genomics*, vol. 15, no. 1, p. 1.
- Kim, E-M, O'Hare, E, Grace, MK, Welch, CC, Billington, CJ & Levine, AS 2000a, 'ARC POMC mRNA and PVN α -MSH are lower in obese relative to lean Zucker rats', *Brain research*, vol. 862, no. 1, pp. 11-6.
- Kim, KS, Larsen, N, Short, T, Plastow, G & Rothschild, MF 2000b, 'A missense variant of the porcine melanocortin-4 receptor (MC4R) gene is associated with fatness, growth, and feed intake traits', *Mammalian Genome*, vol. 11, no. 2, pp. 131-5.
- Kirk, H, Cefalu, WT, Ribnicky, D, Liu, Z & Eilertsen, KJ 2008, 'Botanicals as epigenetic modulators for mechanisms contributing to development of metabolic syndrome', *Metabolism*, vol. 57, pp. S16-S23.
- Kobayashi, S, Berisha, B, Amselgruber, WM, Schams, D & Miyamoto, A 2001, 'Production and localisation of angiotensin II in the bovine early corpus luteum: a possible interaction with luteal angiogenic factors and prostaglandin F2 α ', *Journal of Endocrinology*, vol. 170, no. 2, pp. 369-80.
- Kommadath, A, Te Pas, MFW & Smits, MA 2013, 'Gene coexpression network analysis identifies genes and biological processes shared among anterior pituitary and brain areas that affect estrous behavior in dairy cows', *Journal of dairy science*, vol. 96, no. 4, pp. 2583-95.
- Komolka, K, Ponsuksili, S, Albrecht, E, Kühn, C, Wimmers, K & Maak, S 2016, 'Gene

- expression profile of *Musculus longissimus dorsi* in bulls of a Charolais× Holstein F 2-cross with divergent intramuscular fat content', *Genomics data*, vol. 7, pp. 131-3.
- Koohmaraie, M, Kent, MP, Shackelford, SD, Veiseth, E & Wheeler, TL 2002, 'Meat tenderness and muscle growth: is there any relationship?', *Meat science*, vol. 62, no. 3, pp. 345-52.
- Kruskal, JB 1964, 'Multidimensional scaling by optimizing goodness of fit to a nonmetric hypothesis', *Psychometrika*, vol. 29, no. 1, pp. 1-27.
- Kulig, H, Kowalewska-Luczak, I & Szydlowska, J 2011, 'CRH gene polymorphism in relation to milk production traits in cattle', *Acta Scientiarum Polonorum. Zootechnica*, vol. 10, no. 1.
- Lampo, E, Van Poucke, M, Vandesompele, J, Erkens, T, Van Zeveren, A & Peelman, LJ 2009, 'Positive correlation between relative mRNA expression of PRNP and SPRN in cerebral and cerebellar cortex of sheep', *Molecular and cellular probes*, vol. 23, no. 1, pp. 60-4.
- Langmead, B & Salzberg, SL 2012, 'Fast gapped-read alignment with Bowtie 2', *Nature methods*, vol. 9, no. 4, pp. 357-9.
- Laporta, J, Rosa, GJM, Naya, H & Carriquiry, M 2014, 'Liver functional genomics in beef cows on grazing systems: novel genes and pathways revealed', *Physiological genomics*, vol. 46, no. 4, pp. 138-47.
- LeBlanc, SJ, Duffield, TF, Leslie, KE, Bateman, KG, Keefe, GP, Walton, JS & Johnson, WH 2002, 'Defining and diagnosing postpartum clinical endometritis and its impact on reproductive performance in dairy cows', *Journal of dairy science*, vol. 85, no. 9, pp. 2223-36.
- LeBlanc, SJ, Osawa, T & Dubuc, J 2011, 'Reproductive tract defense and disease in postpartum dairy cows', *Theriogenology*, vol. 76, no. 9, pp. 1610-8.
- Lee, H-J, Jang, M, Kim, H, Kwak, W, Park, W, Hwang, JY, Lee, C-K, Jang, GW, Park, MN & Kim, H-C 2013, 'Comparative transcriptome analysis of adipose tissues reveals that ECM-receptor interaction is involved in the depot-specific adipogenesis in cattle', *PloS one*, vol. 8, no. 6, p. e66267.
- Leinonen, R, Sugawara, H & Shumway, M 2010a, 'The sequence read archive', *Nucleic acids research*, p. gkq1019.
- Leinonen, R, Akhtar, R, Birney, E, Bonfield, J, Bower, L, Corbett, M, Cheng, Y, Demiralp, F, Faruque, N & Goodgame, N 2010b, 'Improvements to services at the European Nucleotide Archive', *Nucleic acids research*, vol. 38, no. suppl 1, pp. D39-D45.

- Lesk, AM 2002, *Introduction to Bioinformatics: Oxford University Press*, Oxford.
- Lewin, HA, Schmitt, K, Hubert, R, van Eijk, MJT & Arnheim, N 1992, 'Close linkage between bovine prolactin and BoLA-DRB3 genes: genetic mapping in cattle by single sperm typing', *Genomics*, vol. 13, no. 1, pp. 44-8.
- Li, J, Witten, DM, Johnstone, IM & Tibshirani, R 2011, 'Normalization, testing, and false discovery rate estimation for RNA-sequencing data', *Biostatistics*, p. kxr031.
- Liao, Y, Smyth, GK & Shi, W 2014, 'featureCounts: an efficient general purpose program for assigning sequence reads to genomic features', *Bioinformatics*, vol. 30, no. 7, pp. 923-30.
- Lindholm-Perry, AK, Sexten, AK, Kuehn, LA, Smith, TPL, King, DA, Shackelford, SD, Wheeler, TL, Ferrell, CL, Jenkins, TG & Snelling, WM 2011, 'Association, effects and validation of polymorphisms within the NCAPG-LCORL locus located on BTA6 with feed intake, gain, meat and carcass traits in beef cattle', *BMC genetics*, vol. 12, no. 1, p. 1.
- Litherland, NB, Bionaz, M, Wallace, RL, Loor, JJ & Drackley, JK 2010, 'Effects of the peroxisome proliferator-activated receptor- α agonists clofibrate and fish oil on hepatic fatty acid metabolism in weaned dairy calves', *Journal of Dairy Science*, vol. 93, no. 6, pp. 2404-18.
- Liu, H, Tian, W, Zan, L, Wang, H & Cui, H 2010, 'Mutations of MC4R gene and its association with economic traits in Qinchuan cattle', *Molecular biology reports*, vol. 37, no. 1, pp. 535-40.
- Liu, J, Weiss, HL, Rychahou, P, Jackson, LN, Evers, BM & Gao, T 2009, 'Loss of PHLPP expression in colon cancer: role in proliferation and tumorigenesis', *Oncogene*, vol. 28, no. 7, pp. 994-1004.
- Liu, M, Li, M, Wang, S, Xu, Y, Lan, X, Li, Z, Lei, C, Yang, D, Jia, Y & Chen, H 2014, 'Association analysis of bovine Foxa2 gene single sequence variant and haplotype combinations with growth traits in Chinese cattle', *Gene*, vol. 536, no. 2, pp. 385-92.
- Liu, X, Bai, C, Ding, X, Wei, Z, Guo, H & Li, G 2015a, 'Microarray Analysis of the Gene Expression Profile and Lipid Metabolism in Fat-1 Transgenic Cattle', *PloS one*, vol. 10, no. 10, p. e0138874.
- Liu, X, Usman, T, Wang, Y, Wang, Z, Xu, X, Wu, M, Zhang, Y, Zhang, X, Li, Q & Liu, L 2015b, 'Polymorphisms in epigenetic and meat quality related genes in fourteen cattle breeds and association with beef quality and carcass traits', *Asian-Australasian journal of animal sciences*, vol. 28, no. 4, p. 467.

- Loftus, RT, MacHugh, DE, Bradley, DG, Sharp, PM & Cunningham, P 1994, 'Evidence for two independent domestications of cattle', *Proceedings of the National Academy of Sciences*, vol. 91, no. 7, pp. 2757-61.
- Loor, JJ, Dann, HM, Everts, RE, Oliveira, R, Green, CA, Guretzky, NAJ, Rodriguez-Zas, SL, Lewin, HA & Drackley, JK 2005, 'Temporal gene expression profiling of liver from periparturient dairy cows reveals complex adaptive mechanisms in hepatic function', *Physiological Genomics*, vol. 23, no. 2, pp. 217-26.
- Loor, JJ, Everts, RE, Bionaz, M, Dann, HM, Morin, DE, Oliveira, R, Rodriguez-Zas, SL, Drackley, JK & Lewin, HA 2007, 'Nutrition-induced ketosis alters metabolic and signaling gene networks in liver of periparturient dairy cows', *Physiological Genomics*, vol. 32, no. 1, pp. 105-16.
- Loor, JJ 2010, 'Genomics of metabolic adaptations in the periparturient cow', *Animal*, vol. 4, no. 07, pp. 1110-39.
- Love, MI, Huber, W & Anders, S 2014, 'Moderated estimation of fold change and dispersion for RNA-seq data with DESeq2', *Genome biology*, vol. 15, no. 12, p. 1.
- Ly, D, Hamblin, M, Rabbi, I, Melaku, G, Bakare, M, Gauch, HG, Okechukwu, R, Dixon, AGO, Kulakow, P & Jannink, J-L 2013, 'Relatedness and genotype $\times$ environment interaction affect prediction accuracies in genomic selection: a study in cassava', *Crop Science*, vol. 53, no. 4, pp. 1312-25.
- Madeja, Z, Adamowicz, T, Chmurzynska, A, Jankowski, T, Melonek, J, Switonski, M & Strabel, T 2004, 'Short communication: effect of leptin gene polymorphisms on breeding value for milk production traits', *Journal of Dairy Science*, vol. 87, no. 11, pp. 3925-7.
- Martin, M, Kettmann, R & Dequiedt, F 2009, 'Class IIa histone deacetylases: conducting development and differentiation', *International Journal of Developmental Biology*, vol. 53, no. 2-3, pp. 291-301.
- McCabe, M, Waters, S, Morris, D, Kenny, D, Lynn, D & Creevey, C 2012, 'RNA-seq analysis of differential gene expression in liver from lactating dairy cows divergent in negative energy balance', *BMC genomics*, vol. 13, no. 1, p. 193.
- McCarthy, DJ, Chen, Y & Smyth, GK 2012a, 'Differential expression analysis of multifactor RNA-Seq experiments with respect to biological variation', *Nucleic acids research*, p. gks042.
- McCarthy, SD, Roche, JF & Forde, N 2012b, 'Temporal changes in endometrial gene expression and protein localization of members of the IGF family in cattle: effects of

- progesterone and pregnancy', *Physiological genomics*, vol. 44, no. 2, pp. 130-40.
- McGowen, MR, Grossman, LI & Wildman, DE 'Dolphin genome provides evidence for adaptive evolution of nervous system genes and a molecular rate slowdown', 2012.
- McNamara, JP 1994, 'Lipid metabolism in adipose tissue during lactation: a model of a metabolic control system', *The Journal of nutrition*, vol. 124, no. 8 Suppl, pp. 1383S-91S.
- Merkin, J, Russell, C, Chen, P & Burge, CB 2012, 'Evolutionary dynamics of gene and isoform regulation in Mammalian tissues', *Science*, vol. 338, no. 6114, pp. 1593-9.
- Mesquita, FS, Pugliesi, G, Scolari, SC, França, MR, Ramos, RS, Oliveira, M, Papa, PdC, Bressan, FF, Meirelles, FV & Silva, LA 2014, 'Manipulation of the periovulatory sex steroidal milieu affects endometrial but not luteal gene expression in early diestrus Nelore cows', *Theriogenology*, vol. 81, no. 6, pp. 861-9.
- Mi, H, Muruganujan, A, Casagrande, JT & Thomas, PD 2013, 'Large-scale gene function analysis with the PANTHER classification system', *Nature protocols*, vol. 8, no. 8, pp. 1551-66.
- Michau, A, Guillemain, G, Grosfeld, A, Vuillaumier-Barrot, S, Grand, T, Keck, M, L'Hoste, S, Chateau, D, Serradas, P & Teulon, J 2013, 'Mutations in SLC2A2 gene reveal hGLUT2 function in pancreatic β cell development', *Journal of Biological Chemistry*, vol. 288, no. 43, pp. 31080-92.
- Minten, MA, Bilby, TR, Bruno, RGS, Allen, CC, Madsen, CA, Wang, Z, Sawyer, JE, Tibary, A, Neibergs, HL & Geary, TW 2013, 'Effects of fertility on gene expression and function of the bovine endometrium', *PLoS One*, vol. 8, no. 8, p. e69444.
- Miyoshi, K, Meyer, B, Gruss, P, Cui, Y, Renou, J-P, Morgan, FV, Smith, GH, Reichenstein, M, Shani, M & Hennighausen, L 2002, 'Mammary epithelial cells are not able to undergo pregnancy-dependent differentiation in the absence of the helix-loop-helix inhibitor Id2', *Molecular Endocrinology*, vol. 16, no. 12, pp. 2892-901.
- Moisá, SJ, Shike, DW, Shoup, L, Rodriguez-Zas, SL & Looor, JJ 2015, 'Maternal plane of nutrition during late gestation and weaning age alter Angus $\times$ Simmental offspring longissimus muscle transcriptome and intramuscular fat', *PloS one*, vol. 10, no. 7, p. e0131478.
- Moran, B, Butler, ST, Moore, SG, MacHugh, DE & Creevey, CJ 2015, 'Differential gene expression in the endometrium reveals cytoskeletal and immunological genes in lactating dairy cows genetically divergent for fertility traits', *Reproduction, Fertility and Development*.

- Mortazavi, A, Williams, BA, McCue, K, Schaeffer, L & Wold, B 2008, 'Mapping and quantifying mammalian transcriptomes by RNA-Seq', *Nature methods*, vol. 5, no. 7, pp. 621-8.
- Nafikov, RA & Beitz, DC 2007, 'Carbohydrate and lipid metabolism in farm animals', *The Journal of nutrition*, vol. 137, no. 3, pp. 702-5.
- Niciura, SCM, Ibelli, AMG, Gouveia, GV, Gromboni, JGG, Rocha, MIP, de Souza, MM, de Mello, SS & de Almeida Regitano, LC 2012, 'Polymorphism and parent-of-origin effects on gene expression of CAST, leptin and DGAT1 in cattle', *Meat science*, vol. 90, no. 2, pp. 507-10.
- Nitsche, C, Edderkaoui, M, Moore, RM, Eibl, G, Kasahara, N, Treger, J, Grippo, PJ, Mayerle, J, Lerch, MM & Gukovskaya, AS 2012, 'The phosphatase PHLPP1 regulates Akt2, promotes pancreatic cancer cell death, and inhibits tumor formation', *Gastroenterology*, vol. 142, no. 2, pp. 377-87.
- Ntzeros, K, Stanier, P, Mazis, D, Kritikos, N, Rozis, M, Anesidis, E, Antoniou, C & Stamatakis, M 2015, 'Gene Section', <http://AtlasGeneticsOncology.org>, p. 104.
- Oaxaca-Castillo, D, Andreoletti, P, Vluggens, A, Yu, S, Van Veldhoven, PP, Reddy, JK & Cherkaoui-Malki, M 2007, 'Biochemical characterization of two functional human liver acyl-CoA oxidase isoforms 1a and 1b encoded by a single gene', *Biochemical and biophysical research communications*, vol. 360, no. 2, pp. 314-9.
- Ogorevc, J, Kunej, T, Razpet, A & Dovc, P 2009, 'Database of cattle candidate genes and genetic markers for milk production and mastitis', *Animal genetics*, vol. 40, no. 6, pp. 832-51.
- Olewuezi, NP, Onoghojobi, B & Udeoyibo, CV 2015, 'A Comparative Study Of Different Outlier Detection Methods In Linear Regression', *Far East Journal of Theoretical Statistics*, vol. 50, no. 3, p. 171.
- Oliveira, LJ, Mansourri-Attia, N, Fahey, AG, Browne, J, Forde, N, Roche, JF, Lonergan, P & Fair, T 2013, 'Characterization of the Th profile of the bovine endometrium during the oestrous cycle and early pregnancy', *PloS one*, vol. 8, no. 10, p. e75571.
- Olsen, HG, Nilsen, H, Hayes, B, Berg, PR, Svendsen, M, Lien, S & Meuwissen, T 2007, 'Genetic support for a quantitative trait nucleotide in the ABCG2 gene affecting milk composition of dairy cattle', *BMC genetics*, vol. 8, no. 1, p. 1.
- O'Neill, AK, Niederst, MJ & Newton, AC 2013, 'Suppression of survival signalling pathways by the phosphatase PHLPP', *FEBS Journal*, vol. 280, no. 2, pp. 572-83.
- Pannier, L, Mullen, AM, Hamill, RM, Stapleton, PC & Sweeney, T 2010, 'Association

- analysis of single nucleotide polymorphisms in DGAT1, TG and FABP4 genes and intramuscular fat in crossbred *Bos taurus* cattle', *Meat science*, vol. 85, no. 3, pp. 515-8.
- Pariset, L, Bongiorno, S, Bueno, S, Gruber, CEM, Prosperini, G, Chillemi, G, Bicorgna, S, Gentile, A & Valentini, A 2013, 'Microarray gene expression profiling of neural tissues in bovine spastic paresis', *BMC veterinary research*, vol. 9, no. 1, p. 1.
- Park, SJ, Lee, SY, Cho, J, Kim, TY, Lee, JW, Park, JH & Han, MJ 2005a, 'Global physiological understanding and metabolic engineering of microorganisms based on omics studies', *Applied microbiology and biotechnology*, vol. 68, no. 5, pp. 567-79.
- Park, S-E, Xu, J, Frolova, A, Liao, L, O'Malley, BW & Katzenellenbogen, BS 2005b, 'Genetic deletion of the repressor of estrogen receptor activity (REA) enhances the response to estrogen in target tissues *in vivo*', *Molecular and Cellular Biology*, vol. 25, no. 5, pp. 1989-99.
- Pinent, M, Hackl, H, Burkard, TR, Prokesch, A, Papak, C, Scheideler, M, Hämmerle, G, Zechner, R, Trajanoski, Z & Strauss, JG 2008, 'Differential transcriptional modulation of biological processes in adipocyte triglyceride lipase and hormone-sensitive lipase-deficient mice', *Genomics*, vol. 92, no. 1, pp. 26-32.
- Premzl, M, Sangiorgio, L, Strumbo, B, Graves, JAM, Simoncic, T & Gready, JE 2003, 'Shadoo, a new protein highly conserved from fish to mammals and with similarity to prion protein', *Gene*, vol. 314, pp. 89-102.
- Pritchard, JK & Cox, NJ 2002, 'The allelic architecture of human disease genes: common disease—common variant... or not?', *Human molecular genetics*, vol. 11, no. 20, pp. 2417-23.
- Pryce, JE, Bolormaa, S, Chamberlain, AJ, Bowman, PJ, Savin, K, Goddard, ME & Hayes, BJ 2010, 'A validated genome-wide association study in 2 dairy cattle breeds for milk production and fertility traits using variable length haplotypes', *Journal of Dairy Science*, vol. 93, no. 7, pp. 3331-45.
- Qiao, M, Wang, Y, Xu, X, Lu, J, Dong, Y, Tao, W, Stein, J, Stein, GS, Iglehart, JD & Shi, Q 2010, 'Mst1 is an interacting protein that mediates PHLPPs' induced apoptosis', *Molecular cell*, vol. 38, no. 4, pp. 512-23.
- Ramayo-Caldas, Y, Mach, N, Esteve-Codina, A, Corominas, J, Castelló, A, Ballester, M, Estellé, J, Ibáñez-Escriche, N, Fernández, AI & Pérez-Enciso, M 2012, 'Liver transcriptome profile in pigs with extreme phenotypes of intramuscular fatty acid composition', *BMC genomics*, vol. 13, no. 1, p. 1.

- Ramos, RdS, Mesquita, FS, D'Alexandri, FL, Gonella-Diaza, AM, Papa, PdC & Binelli, M 2014, 'Regulation of the polyamine metabolic pathway in the endometrium of cows during early diestrus', *Molecular reproduction and development*, vol. 81, no. 7, pp. 584-94.
- Rapaport, F, Khanin, R, Liang, Y, Pirun, M, Krek, A, Zumbo, P, Mason, CE, Socci, ND & Betel, D 2013, 'Comprehensive evaluation of differential gene expression analysis methods for RNA-seq data', *Genome biology*, vol. 14, no. 9, p. 1.
- Ribeiro, ES, Greco, LF, Bisinotto, RS, Lima, FS, Thatcher, WW & Santos, JE 2016, 'Biology of preimplantation conceptus at the onset of elongation in dairy cows', *Biology of reproduction*, pp. biolreprod-115.
- Riboni, MV, Meier, S, Priest, NV, Burke, CR, Kay, JK, McDougall, S, Mitchell, MD, Walker, CG, Crookenden, M & Heiser, A 2015, 'Adipose and liver gene expression profiles in response to treatment with a nonsteroidal antiinflammatory drug after calving in grazing dairy cows', *Journal of dairy science*, vol. 98, no. 5, pp. 3079-85.
- Richt, JA & Hall, SM 2008, 'BSE case associated with prion protein gene mutation', *PLoS Pathog*, vol. 4, no. 9, p. e1000156.
- Robinson, MD, McCarthy, DJ & Smyth, GK 2010, 'edgeR: a Bioconductor package for differential expression analysis of digital gene expression data', *Bioinformatics*, vol. 26, no. 1, pp. 139-40.
- Roche, JR, Blache, D, Kay, JK, Miller, DR, Sheahan, AJ & Miller, DW 2008, 'Neuroendocrine and physiological regulation of intake with particular reference to domesticated ruminant animals', *Nutrition Research Reviews*, vol. 21, no. 02, pp. 207-34.
- Robinson, RS, Hammond, AJ, Wathes, DC, Hunter, MG & Mann, GE 2008, 'Corpus luteum–endometrium–embryo interactions in the dairy cow: underlying mechanisms and clinical relevance', *Reproduction in Domestic Animals*, vol. 43, no. s2, pp. 104-12.
- Ron, M, Cohen-Zinder, M, Peter, C, Weller, JI & Erhardt, G 2006, 'Short communication: a polymorphism in ABCG2 in *Bos indicus* and *Bos taurus* cattle breeds', *Journal of dairy science*, vol. 89, no. 12, pp. 4921-3.
- Rosenbaum, S, Ringseis, R, Hillen, S, Becker, S, Erhardt, G, Reiner, G & Eder, K 2012, 'Genome-wide transcript profiling indicates induction of energy-generating pathways and an adaptive immune response in the liver of sows during lactation', *Comparative Biochemistry and Physiology Part D: Genomics and Proteomics*, vol. 7, no. 4, pp. 370-81.

- Rosenbaum, S, Ringseis, R, Most, E, Hillen, S, Becker, S, Erhardt, G, Reiner, G & Eder, K 2013, 'Genes involved in carnitine synthesis and carnitine uptake are up-regulated in the liver of sows during lactation', *Acta Veterinaria Scandinavica*, vol. 55, no. 1, p. 1.
- Sadkowski, T, Ciecierska, A, Majewska, A, Oprządek, J, Dasiewicz, K, Ollick, M, Wicik, Z & Motyl, T 2014, 'Transcriptional background of beef marbling—novel genes implicated in intramuscular fat deposition', *Meat science*, vol. 97, no. 1, pp. 32-41.
- Sales, MA, Larson, MJ, Reiter, ST, Brown, AH, Brown, MA, Looper, ML, Coffey, KP & Rosenkrans Jr, CF 2012, 'Effects of bovine cytochrome P450 single-nucleotide polymorphism, forage type and body condition on production traits in cattle', *Journal of animal physiology and animal nutrition*, vol. 96, no. 4, pp. 545-53.
- Sauerwein, H, Bendixen, E, Restelli, L & Ceciliani, F 2014, 'The adipose tissue in farm animals: a proteomic approach', *Current Protein and Peptide Science*, vol. 15, no. 2, pp. 146-55.
- Savas, Ü, Machemer, DEW, Hsu, M-H, Gaynor, P, Lasker, JM, Tukey, RH & Johnson, EF 2009, 'Opposing roles of peroxisome proliferator-activated receptor α and growth hormone in the regulation of CYP4A11 expression in a transgenic mouse model', *Journal of Biological Chemistry*, vol. 284, no. 24, pp. 16541-52.
- Sbarbati, A, Accorsi, D, Benati, D, Marchetti, L, Orsini, G, Rigotti, G & Panettiere, P 2010, 'Subcutaneous adipose tissue classification', *European Journal of Histochemistry*, vol. 54, no. 4, p. 48.
- Schenkel, FS, Miller, SP, Jiang, Z, Mandell, IB, Ye, X, Li, H & Wilton, JW 2006, 'Association of a single nucleotide polymorphism in the calpastatin gene with carcass and meat quality traits of beef cattle', *Journal of Animal Science*, vol. 84, no. 2, pp. 291-9.
- Schweiger, M, Schreiber, R, Haemmerle, G, Lass, A, Fledelius, C, Jacobsen, P, Tornqvist, H, Zechner, R & Zimmermann, R 2006, 'Adipose triglyceride lipase and hormone-sensitive lipase are the major enzymes in adipose tissue triacylglycerol catabolism', *Journal of Biological Chemistry*, vol. 281, no. 52, pp. 40236-41.
- Schwerin, M, Kuehn, C, Wimmers, S, Walz, C & Goldammer, T 2006, 'Trait-associated expressed hepatic and intestine genes in cattle of different metabolic type—putative functional candidates for nutrient utilization', *Journal of Animal Breeding and Genetics*, vol. 123, no. 5, pp. 307-14.
- Seeley, RJ, Yagaloff, KA, Fisher, SL, Burn, P, Thiele, TE, van Dijk, G, Baskin, DG & Schwartz, MW 1997, 'Melanocortin receptors in leptin effects', *Nature*, vol. 390, no.

6658, pp. 349-.

- Selim, S, Kokkonen, T, Taponen, J, Vanhatalo, A & Elo, K 2015, 'Effect of prepartal ad libitum feeding of grass silage on transcriptional adaptations of the liver and subcutaneous adipose tissue in dairy cows during the periparturient period', *Journal of dairy science*, vol. 98, no. 8, pp. 5515-28.
- Seo, M, Caetano-Anolles, K, Rodriguez-Zas, S, Ka, S, Jeong, JY, Park, S, Kim, MJ, Nho, W-G, Cho, S & Kim, H 2016, 'Comprehensive identification of sexually dimorphic genes in diverse cattle tissues using RNA-seq', *BMC genomics*, vol. 17, no. 1, p. 1.
- Shastri, BS 2009, 'SNPs: impact on gene function and phenotype', *Single Nucleotide Polymorphisms: Methods and Protocols*, pp. 3-22.
- Shen, Y, Li, N, Wu, S, Zhou, Y, Shan, Y, Zhang, Q, Ding, C, Yuan, Q, Zhao, F & Zeng, R 2008, 'Nudel binds Cdc42GAP to modulate Cdc42 activity at the leading edge of migrating cells', *Developmental cell*, vol. 14, no. 3, pp. 342-53.
- Sherry, ST, Ward, MH, Kholodov, M, Baker, J, Phan, L, Smigielski, EM & Sirotkin, K 2001, 'dbSNP: the NCBI database of genetic variation', *Nucleic acids research*, vol. 29, no. 1, pp. 308-11.
- Shimizu, T, Krebs, S, Bauersachs, S, Blum, H, Wolf, E & Miyamoto, A 2010, 'Actions and interactions of progesterone and estrogen on transcriptome profiles of the bovine endometrium', *Physiological genomics*, vol. 42, no. 4, pp. 290-300.
- Shirasuna, K, Nitta, A, Sineenard, J, Shimizu, T, Bollwein, H & Miyamoto, A 2012, 'Vascular and immune regulation of corpus luteum development, maintenance, and regression in the cow', *Domestic animal endocrinology*, vol. 43, no. 2, pp. 198-211.
- Silber, BM 2001, 'Pharmacogenomics, biomarkers, and the promise of personalized medicine', *Drugs and The Pharmaceutical Sciences*, vol. 113, pp. 11-32.
- Singh, U, Deb, R, Alyethodi, RR, Alex, R, Kumar, S, Chakraborty, S, Dhama, K & Sharma, A 2014, 'Molecular markers and their applications in cattle genetic research: A review', *Biomarkers and Genomic Medicine*, vol. 6, no. 2, pp. 49-58.
- Smyth, GK, Michaud, J & Scott, HS 2005, 'Use of within-array replicate spots for assessing differential expression in microarray experiments', *Bioinformatics*, vol. 21, no. 9, pp. 2067-75.
- Stelzer, G, Rosen, N, Plaschkes, I, Zimmerman, S, Twik, M, Fishilevich, S, Stein, TI, Nudel, R, Lieder, I & Mazor, Y 2016, 'The GeneCards Suite: From Gene Data Mining to Disease Genome Sequence Analyses', *Current Protocols in Bioinformatics*, pp. 1-30.
- Stenzel-Poore, MP, Cameron, VA, Vaughan, J, Sawchenko, PE & Vale, W 1992,

- 'Development of Cushing's syndrome in corticotropin-releasing factor transgenic mice', *Endocrinology*, vol. 130, no. 6, pp. 3378-86.
- Sumner-Thomson, JM, Vierck, JL & McNamara, JP 2011, 'Differential expression of genes in adipose tissue of first-lactation dairy cattle', *Journal of dairy science*, vol. 94, no. 1, pp. 361-9.
- Szklarczyk, D, Franceschini, A, Wyder, S, Forslund, K, Heller, D, Huerta-Cepas, J, Simonovic, M, Roth, A, Santos, A & Tsafou, KP 2014, 'STRING v10: protein–protein interaction networks, integrated over the tree of life', *Nucleic acids research*, p. gku1003.
- Taberlet, P, Coissac, E, Pansu, J & Pompanon, F 2011, 'Conservation genetics of cattle, sheep, and goats', *Comptes rendus biologies*, vol. 334, no. 3, pp. 247-54.
- Takeda, K, Sriram, S, Chan, XHD, Ong, WK, Yeo, CR, Tan, B, Lee, S-A, Kong, KV, Hoon, S & Jiang, H 2016, 'Retinoic Acid Mediates Visceral-Specific Adipogenic Defects of Human Adipose-Derived Stem Cells', *Diabetes*, p. db151315.
- Taft, RJ, Pang, KC, Mercer, TR, Dinger, M & Mattick, JS 2010, 'Non-coding RNAs: regulators of disease', *The Journal of pathology*, vol. 220, no. 2, pp. 126-39.
- Teng, D-C, Sun, J, An, Y-Q, Hu, Z-H, Liu, P, Ma, Y-C, Han, B & Shi, Y 2016, 'Role of PHLPP1 in inflammation response: Its loss contributes to gliomas development and progression', *International immunopharmacology*, vol. 34, pp. 229-34.
- Thomas, PD, Campbell, MJ, Kejariwal, A, Mi, H, Karlak, B, Daverman, R, Diemer, K, Muruganujan, A & Narechania, A 2003, 'PANTHER: a library of protein families and subfamilies indexed by function', *Genome research*, vol. 13, no. 9, pp. 2129-41.
- Tian, C, Liu, D, Chen, C, Xu, Y, Gong, H-S, Chen, C, Shi, Q, Zhang, B-Y, Han, J & Dong, X-P 2013, 'Global transcriptional profiling of the postmortem brain of a patient with G114V genetic Creutzfeldt-Jakob disease', *International journal of molecular medicine*, vol. 31, no. 3, pp. 676-88.
- Trapnell, C, Hendrickson, DG, Sauvageau, M, Goff, L, Rinn, JL & Pachter, L 2013, 'Differential analysis of gene regulation at transcript resolution with RNA-seq', *Nature biotechnology*, vol. 31, no. 1, pp. 46-53.
- Troy, CS, MacHugh, DE, Bailey, JF, Magee, DA, Loftus, RT, Cunningham, P, Chamberlain, AT, Sykes, BC & Bradley, DG 2001, 'Genetic evidence for Near-Eastern origins of European cattle', *Nature*, vol. 410, no. 6832, pp. 1088-91.
- Tugwood, JD, Issemann, I, Anderson, RG, Bundell, KR, McPheat, WL & Green, S 1992, 'The mouse peroxisome proliferator activated receptor recognizes a response element

- in the 5'flanking sequence of the rat acyl CoA oxidase gene', *The EMBO journal*, vol. 11, no. 2, p. 433.
- Uboldi, C, Paulis, M, Guidi, E, Bertoni, A, Di Meo, GP, Perucatti, A, Iannuzzi, L, Raimondi, E, Brunner, RM & Eggen, A 2006, 'Cloning of the bovine prion-like Shadoo (SPRN) gene by comparative analysis of the predicted genomic locus', *Mammalian genome*, vol. 17, no. 11, pp. 1130-9.
- UniProt, C 2011, 'Reorganizing the protein space at the Universal Protein Resource (UniProt)', *Nucleic acids research*, p. gkr981.
- Van Hengel, J, D'Hooge, P, Hooghe, B, Wu, X, Libbrecht, L, De Vos, R, Quondamatteo, F, Klempt, M, Brakebusch, C & Van Roy, F 2008, 'Continuous cell injury promotes hepatic tumorigenesis in cdc42-deficient mouse liver', *Gastroenterology*, vol. 134, no. 3, pp. 781-92.
- Viitala, S, Szyda, J, Blott, S, Schulman, N, Lidauer, M, Mäki-Tanila, A, Georges, M & Vilkki, J 2006, 'The role of the bovine growth hormone receptor and prolactin receptor genes in milk, fat and protein production in Finnish Ayrshire dairy cattle', *Genetics*, vol. 173, no. 4, pp. 2151-64.
- Wang, ET, Sandberg, R, Luo, S, Khrebtkova, I, Zhang, L, Mayr, C, Kingsmore, SF, Schroth, GP & Burge, CB 2008, 'Alternative isoform regulation in human tissue transcriptomes', *Nature*, vol. 456, no. 7221, pp. 470-6.
- Wang, M, Moisés, S, Khan, MJ, Wang, J, Bu, D & Loo, JJ 2012, 'MicroRNA expression patterns in the bovine mammary gland are affected by stage of lactation', *Journal of dairy science*, vol. 95, no. 11, pp. 6529-35.
- Wang, S, Zhao, H & Zhang, Y 2014a, 'Advances in research on Shadoo, Shadow of prion protein', *Chinese Science Bulletin*, vol. 59, no. 9, pp. 821-7.
- Wang, W, Wang, S, Hou, C, Xing, Y, Cao, J, Wu, K, Liu, C, Zhang, D, Zhang, L & Zhang, Y 2014b, 'Genome-wide detection of copy number variations among diverse horse breeds by array CGH', *PloS one*, vol. 9, no. 1, p. e86860.
- Wang, Z, Gerstein, M & Snyder, M 2009, 'RNA-Seq: a revolutionary tool for transcriptomics', *Nature reviews genetics*, vol. 10, no. 1, pp. 57-63.
- Waters, SM, Coyne, GS, Kenny, DA, MacHugh, DE & Morris, DG 2012, 'Dietary n-3 polyunsaturated fatty acid supplementation alters the expression of genes involved in the control of fertility in the bovine uterine endometrium', *Physiological genomics*, vol. 44, no. 18, pp. 878-88.
- Wathes, DC, Cheng, Z, Chowdhury, W, Fenwick, MA, Fitzpatrick, R, Morris, DG, Patton, J

- & Murphy, JJ 2009, 'Negative energy balance alters global gene expression and immune responses in the uterus of postpartum dairy cows', *Physiological Genomics*, vol. 39, no. 1, pp. 1-13.
- Wathes, DC, Fenwick, MA, Llewellyn, S, Cheng, Z, Fitzpatrick, R, McCarthy, SD, Morris, DG, Patton, J & Murphy, JJ 2008 'Influence of energy balance on gene expression in the liver and reproductive tract of lactating cows and consequent effects on fertility'.
- Watson, CJ 2001, 'Stat transcription factors in mammary gland development and tumorigenesis', *Journal of mammary gland biology and neoplasia*, vol. 6, no. 1, pp. 115-27.
- Wei, X-E, Zhang, F-Y, Wang, K, Zhang, Q-X & Rong, L-Q 2014, 'Assembly of the FKBP51–PHLPP2–AKT signaling complex in cerebral ischemia/reperfusion injury in rats', *Brain research*, vol. 1566, pp. 60-8.
- West, HJ 1990, 'Effect on liver function of acetonaemia and the fat cow syndrome in cattle', *Research in veterinary science*, vol. 48, no. 2, pp. 221-7.
- Wibowo, TA, Gaskins, CT, Newberry, RC, Thorgaard, GH, Michal, JJ & Jiang, Z 2008, 'Genome assembly anchored QTL map of bovine chromosome 14', *Int J Biol Sci*, vol. 4, no. 6, pp. 406-14.
- Wiedemann, S, Sigl, G, Schmutz, C, Kaske, M, Viturro, E & Meyer, HHD 2013, 'Omission of dry period or milking once daily affects metabolic status and is reflected by mRNA levels of enzymes in liver and muscle of dairy cows', *Livestock Science*, vol. 154, no. 1, pp. 193-203.
- Williams, LM & Oleksiak, MF 2011, 'Ecologically and evolutionarily important SNPs identified in natural populations', *Molecular biology and evolution*, vol. 28, no. 6, pp. 1817-26.
- Williams, EJ 2013, 'Drivers of Post-partum Uterine Disease in Dairy Cattle', *Reproduction in Domestic Animals*, vol. 48, no. s1, pp. 53-8.
- Woelders, H, van der Lende, T, Kommadath, A, te Pas, MFW, Smits, MA & Kaal, L 2014, 'Central genomic regulation of the expression of oestrous behaviour in dairy cows: a review', *animal*, vol. 8, no. 05, pp. 754-64.
- Wolf, Cd 2006, 'Regulation of human Protein S gene (PROS1) transcription'.
- Yamamoto, M, Morita, S-y, Kumon, M, Kawabe, M, Nishitsuji, K, Saito, H, Vertut-Doi, A, Nakano, M & Handa, T 2003, 'Effects of plasma apolipoproteins on lipoprotein lipase-mediated lipolysis of small and large lipid emulsions', *Biochimica et Biophysica Acta (BBA)-Molecular and Cell Biology of Lipids*, vol. 1632, no. 1, pp.

31-9.

- Yayou, K, Kitagawa, S, Ito, S, Kasuya, E & Sutoh, M 2009, 'Effects of intracerebroventricular administration of neuromedin U or neuromedin S in steers', *General and comparative endocrinology*, vol. 163, no. 3, pp. 324-8.
- Yayou, K-i 2012, 'Central Regulation of Stress Response in Cattle', *Japan Agricultural Research Quarterly: JARQ*, vol. 46, no. 1, pp. 27-34.
- Yu, H, Luscombe, NM, Lu, HX, Zhu, X, Xia, Y, Han, J-DJ, Bertin, N, Chung, S, Vidal, M & Gerstein, M 2004, 'Annotation transfer between genomes: protein–protein interologs and protein–DNA regulogs', *Genome research*, vol. 14, no. 6, pp. 1107-18.
- Zambonelli, P, Gaffo, E, Zappaterra, M, Bortoluzzi, S & Davoli, R 2016, 'Transcriptional profiling of subcutaneous adipose tissue in Italian Large White pigs divergent for backfat thickness', *Animal genetics*.
- Zancanella, V, Giantin, M, Lopparelli, RM, Patarnello, T, Dacasto, M & Negrisolo, E 2010, 'Proposed new nomenclature for Bos taurus cytochromes P450 involved in xenobiotic drug metabolism', *Journal of veterinary pharmacology and therapeutics*, vol. 33, no. 6, pp. 528-36.
- Zhang, C-L, Wang, Y-H, Chen, H, Lan, X-Y, Lei, C-Z & Fang, X-T 2009, 'Association between variants in the 5'-untranslated region of the bovine MC4R gene and two growth traits in Nanyang cattle', *Molecular biology reports*, vol. 36, no. 7, pp. 1839-43.
- Zhao, H, Liu, L-L, Du, S-H, Wang, S-Q & Zhang, Y-P 2012a, 'Comparative analysis of the Shadoo gene between cattle and buffalo reveals significant differences', *PloS one*, vol. 7, no. 10, p. e46601.
- Zhao, C, Tian, F, Yu, Y, Luo, J, Mitra, A, Zhan, F, Hou, Y, Liu, G, Zan, L & Updike, MS 2012b, 'Functional genomic analysis of variation on beef tenderness induced by acute stress in Angus cattle', *Comparative and functional genomics*, vol. 2012.
- Zhou, X, Lindsay, H & Robinson, MD 2014, 'Robustly detecting differential expression in RNA sequencing data using observation weights', *Nucleic acids research*, vol. 42, no. 11, pp. e91-e.
- Zinser, ER & Kolter, R 1999, 'Mutations enhancing amino acid catabolism confer a growth advantage in stationary phase', *Journal of bacteriology*, vol. 181, no. 18, pp. 5800-7.

APPENDIX

APPENDIX A.1

DEGs and Tissue-Specific Genes of Adipose



Table A.1. Differentially expressed and tissue-specific (in bold) genes of adipose.

ENSBTAG00000000015	ENSBTAG000000000593	ENSBTAG000000001075	ENSBTAG000000001564	ENSBTAG000000002051
ENSBTAG000000000033	ENSBTAG000000000603	ENSBTAG000000001078	ENSBTAG000000001568	ENSBTAG000000002068
ENSBTAG000000000044	ENSBTAG000000000607	ENSBTAG000000001093	ENSBTAG000000001572	ENSBTAG000000002076
ENSBTAG000000000052	ENSBTAG000000000608	ENSBTAG000000001099	ENSBTAG000000001598	ENSBTAG000000002081
ENSBTAG000000000057	ENSBTAG000000000625	ENSBTAG000000001101	ENSBTAG000000001601	ENSBTAG000000002089
ENSBTAG00000000064	ENSBTAG000000000644	ENSBTAG000000001120	ENSBTAG000000001603	ENSBTAG000000002092
ENSBTAG000000000085	ENSBTAG000000000667	ENSBTAG000000001135	ENSBTAG000000001604	ENSBTAG000000002094
ENSBTAG000000000087	ENSBTAG000000000668	ENSBTAG000000001136	ENSBTAG000000001607	ENSBTAG000000002098
ENSBTAG000000000092	ENSBTAG000000000672	ENSBTAG000000001138	ENSBTAG000000001609	ENSBTAG000000002110
ENSBTAG000000000094	ENSBTAG000000000683	ENSBTAG000000001154	ENSBTAG000000001615	ENSBTAG000000002121
ENSBTAG000000000098	ENSBTAG000000000698	ENSBTAG000000001165	ENSBTAG000000001618	ENSBTAG000000002126
ENSBTAG000000000124	ENSBTAG000000000703	ENSBTAG000000001176	ENSBTAG000000001632	ENSBTAG000000002144
ENSBTAG000000000128	ENSBTAG000000000711	ENSBTAG000000001183	ENSBTAG000000001644	ENSBTAG000000002151
ENSBTAG000000000188	ENSBTAG000000000720	ENSBTAG000000001207	ENSBTAG000000001662	ENSBTAG000000002179
ENSBTAG000000000207	ENSBTAG000000000742	ENSBTAG000000001228	ENSBTAG000000001687	ENSBTAG000000002182
ENSBTAG000000000250	ENSBTAG000000000754	ENSBTAG000000001262	ENSBTAG000000001706	ENSBTAG000000002184
ENSBTAG000000000253	ENSBTAG000000000755	ENSBTAG000000001269	ENSBTAG000000001711	ENSBTAG000000002194
ENSBTAG000000000257	ENSBTAG000000000758	ENSBTAG000000001280	ENSBTAG000000001725	ENSBTAG000000002204
ENSBTAG000000000258	ENSBTAG000000000770	ENSBTAG000000001286	ENSBTAG000000001731	ENSBTAG000000002214
ENSBTAG000000000275	ENSBTAG000000000817	ENSBTAG000000001289	ENSBTAG000000001767	ENSBTAG000000002215
ENSBTAG000000000277	ENSBTAG000000000818	ENSBTAG000000001292	ENSBTAG000000001774	ENSBTAG000000002226
ENSBTAG000000000283	ENSBTAG000000000833	ENSBTAG000000001298	ENSBTAG000000001781	ENSBTAG000000002238
ENSBTAG000000000286	ENSBTAG000000000838	ENSBTAG000000001305	ENSBTAG000000001814	ENSBTAG000000002249
ENSBTAG000000000289	ENSBTAG000000000843	ENSBTAG000000001324	ENSBTAG000000001815	ENSBTAG000000002278
ENSBTAG000000000291	ENSBTAG000000000848	ENSBTAG000000001332	ENSBTAG000000001816	ENSBTAG000000002299
ENSBTAG000000000300	ENSBTAG000000000853	ENSBTAG000000001333	ENSBTAG000000001827	ENSBTAG000000002315
ENSBTAG000000000305	ENSBTAG000000000894	ENSBTAG000000001344	ENSBTAG000000001851	ENSBTAG000000002323
ENSBTAG000000000310	ENSBTAG000000000898	ENSBTAG000000001350	ENSBTAG000000001862	ENSBTAG000000002326
ENSBTAG000000000328	ENSBTAG000000000908	ENSBTAG000000001359	ENSBTAG000000001918	ENSBTAG000000002349
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ENSBTAG000000000440	ENSBTAG000000000960	ENSBTAG000000001465	ENSBTAG000000001966	ENSBTAG000000002487
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ENSBTAG00000020814	ENSBTAG00000021216	ENSBTAG00000021865	ENSBTAG00000023885	ENSBTAG00000026896
ENSBTAG00000020839	ENSBTAG00000021226	ENSBTAG00000021872	ENSBTAG00000023891	ENSBTAG00000026919
ENSBTAG00000020855	ENSBTAG00000021251	ENSBTAG00000021901	ENSBTAG00000023928	ENSBTAG00000026986
ENSBTAG00000020865	ENSBTAG00000021259	ENSBTAG00000021941	ENSBTAG00000023941	ENSBTAG00000027064
ENSBTAG00000020869	ENSBTAG00000021260	ENSBTAG00000021945	ENSBTAG00000024086	ENSBTAG00000027080
ENSBTAG00000020880	ENSBTAG00000021273	ENSBTAG00000021953	ENSBTAG00000024096	ENSBTAG00000027134
ENSBTAG00000020887	ENSBTAG00000021286	ENSBTAG00000021955	ENSBTAG00000024137	ENSBTAG00000027320
ENSBTAG00000020898	ENSBTAG00000021287	ENSBTAG00000021970	ENSBTAG00000024240	ENSBTAG00000027409
ENSBTAG00000020905	ENSBTAG00000021293	ENSBTAG00000021976	ENSBTAG00000024326	ENSBTAG00000027444
ENSBTAG00000020914	ENSBTAG00000021302	ENSBTAG00000021978	ENSBTAG00000024539	ENSBTAG00000027446
ENSBTAG00000020928	ENSBTAG00000021306	ENSBTAG00000021992	ENSBTAG00000024548	ENSBTAG00000027513
ENSBTAG00000020930	ENSBTAG00000021308	ENSBTAG00000021994	ENSBTAG00000024787	ENSBTAG00000027562
ENSBTAG00000020944	ENSBTAG00000021321	ENSBTAG00000022020	ENSBTAG00000024814	ENSBTAG00000027629
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ENSBTAG00000020956	ENSBTAG00000021370	ENSBTAG00000022058	ENSBTAG00000024903	ENSBTAG00000027696
ENSBTAG00000020962	ENSBTAG00000021374	ENSBTAG00000022083	ENSBTAG00000024904	ENSBTAG00000027841
ENSBTAG00000020963	ENSBTAG00000021378	ENSBTAG00000022155	ENSBTAG00000025005	ENSBTAG00000027868

ENSBTAG00000027900	ENSBTAG00000031950	ENSBTAG00000035958	ENSBTAG00000038534	ENSBTAG00000040126
ENSBTAG00000027924	ENSBTAG00000031981	ENSBTAG00000036028	ENSBTAG00000038613	ENSBTAG00000040128
ENSBTAG00000029836	ENSBTAG00000032017	ENSBTAG00000036078	ENSBTAG00000038630	ENSBTAG00000040193
ENSBTAG00000030173	ENSBTAG00000032021	ENSBTAG00000037413	ENSBTAG00000038639	ENSBTAG00000040206
ENSBTAG00000030199	ENSBTAG00000032057	ENSBTAG00000037470	ENSBTAG00000038716	ENSBTAG00000040226
ENSBTAG00000030278	ENSBTAG00000032097	ENSBTAG00000037500	ENSBTAG00000038737	ENSBTAG00000040295
ENSBTAG00000030416	ENSBTAG00000032136	ENSBTAG00000037508	ENSBTAG00000038770	ENSBTAG00000040304
ENSBTAG00000030424	ENSBTAG00000032183	ENSBTAG00000037526	ENSBTAG00000038783	ENSBTAG00000040347
ENSBTAG00000030425	ENSBTAG00000032217	ENSBTAG00000037533	ENSBTAG00000038842	ENSBTAG00000040367
ENSBTAG00000030483	ENSBTAG00000032292	ENSBTAG00000037555	ENSBTAG00000038854	ENSBTAG00000040368
ENSBTAG00000030493	ENSBTAG00000032477	ENSBTAG00000037558	ENSBTAG00000038865	ENSBTAG00000040393
ENSBTAG00000030518	ENSBTAG00000032517	ENSBTAG00000037625	ENSBTAG00000038888	ENSBTAG00000040477
ENSBTAG00000030520	ENSBTAG00000032642	ENSBTAG00000037651	ENSBTAG00000038916	ENSBTAG00000040490
ENSBTAG00000030521	ENSBTAG00000032719	ENSBTAG00000037661	ENSBTAG00000038962	ENSBTAG00000040494
ENSBTAG00000030529	ENSBTAG00000032774	ENSBTAG00000037726	ENSBTAG00000038990	ENSBTAG00000040605
ENSBTAG00000030553	ENSBTAG00000032862	ENSBTAG00000037735	ENSBTAG00000039015	ENSBTAG00000042180
ENSBTAG00000030587	ENSBTAG00000032899	ENSBTAG00000037768	ENSBTAG00000039035	ENSBTAG00000042335
ENSBTAG00000030599	ENSBTAG00000033008	ENSBTAG00000037778	ENSBTAG00000039041	ENSBTAG00000042339
ENSBTAG00000030608	ENSBTAG00000033166	ENSBTAG00000037804	ENSBTAG00000039091	ENSBTAG00000042456
ENSBTAG00000030669	ENSBTAG00000033217	ENSBTAG00000037811	ENSBTAG00000039105	ENSBTAG00000042471
ENSBTAG00000030671	ENSBTAG00000033255	ENSBTAG00000037821	ENSBTAG00000039121	ENSBTAG00000042504
ENSBTAG00000030686	ENSBTAG00000033304	ENSBTAG00000037856	ENSBTAG00000039129	ENSBTAG00000042601
ENSBTAG00000030775	ENSBTAG00000033322	ENSBTAG00000037951	ENSBTAG00000039329	ENSBTAG00000042833
ENSBTAG00000030820	ENSBTAG00000033422	ENSBTAG00000038045	ENSBTAG00000039340	ENSBTAG00000042836
ENSBTAG00000030973	ENSBTAG00000033531	ENSBTAG00000038067	ENSBTAG00000039366	ENSBTAG00000042868
ENSBTAG00000030974	ENSBTAG00000033603	ENSBTAG00000038107	ENSBTAG00000039477	ENSBTAG00000042883
ENSBTAG00000030979	ENSBTAG00000033679	ENSBTAG00000038124	ENSBTAG00000039529	ENSBTAG00000043197
ENSBTAG00000031004	ENSBTAG00000033727	ENSBTAG00000038132	ENSBTAG00000039601	ENSBTAG00000043202
ENSBTAG00000031184	ENSBTAG00000034192	ENSBTAG00000038148	ENSBTAG00000039618	ENSBTAG00000043207
ENSBTAG00000031188	ENSBTAG00000034323	ENSBTAG00000038181	ENSBTAG00000039620	ENSBTAG00000043250
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ENSBTAG00000031347	ENSBTAG00000034393	ENSBTAG00000038232	ENSBTAG00000039718	ENSBTAG00000043392
ENSBTAG00000031544	ENSBTAG00000034493	ENSBTAG00000038238	ENSBTAG00000039719	ENSBTAG00000043468
ENSBTAG00000031590	ENSBTAG00000034529	ENSBTAG00000038241	ENSBTAG00000039740	ENSBTAG00000043512
ENSBTAG00000031614	ENSBTAG00000034560	ENSBTAG00000038258	ENSBTAG00000039793	ENSBTAG00000043545
ENSBTAG00000031631	ENSBTAG00000034674	ENSBTAG00000038286	ENSBTAG00000039810	ENSBTAG00000043553
ENSBTAG00000031647	ENSBTAG00000034680	ENSBTAG00000038321	ENSBTAG00000039815	ENSBTAG00000043554
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ENSBTAG00000031717	ENSBTAG00000034867	ENSBTAG00000038409	ENSBTAG00000039943	ENSBTAG00000043565
ENSBTAG00000031749	ENSBTAG00000034885	ENSBTAG00000038415	ENSBTAG00000039958	ENSBTAG00000043567
ENSBTAG00000031806	ENSBTAG00000035064	ENSBTAG00000038426	ENSBTAG00000040028	ENSBTAG00000043570
ENSBTAG00000031852	ENSBTAG00000035293	ENSBTAG00000038439	ENSBTAG00000040053	ENSBTAG00000043572
ENSBTAG00000031866	ENSBTAG00000035662	ENSBTAG00000038488	ENSBTAG00000040067	ENSBTAG00000043580
ENSBTAG00000031916	ENSBTAG00000035844	ENSBTAG00000038523	ENSBTAG00000040088	ENSBTAG00000043582

ENSBTAG00000043639	ENSBTAG00000045717	ENSBTAG00000046319	ENSBTAG00000047078	ENSBTAG00000047659
ENSBTAG00000043958	ENSBTAG00000045728	ENSBTAG00000046321	ENSBTAG00000047129	ENSBTAG00000047700
ENSBTAG00000043960	ENSBTAG00000045746	ENSBTAG00000046332	ENSBTAG00000047148	ENSBTAG00000047717
ENSBTAG00000043989	ENSBTAG00000045754	ENSBTAG00000046333	ENSBTAG00000047153	ENSBTAG00000047718
ENSBTAG00000043993	ENSBTAG00000045789	ENSBTAG00000046337	ENSBTAG00000047155	ENSBTAG00000047739
ENSBTAG00000043996	ENSBTAG00000045819	ENSBTAG00000046338	ENSBTAG00000047169	ENSBTAG00000047744
ENSBTAG00000044027	ENSBTAG00000045834	ENSBTAG00000046339	ENSBTAG00000047174	ENSBTAG00000047754
ENSBTAG00000044071	ENSBTAG00000045881	ENSBTAG00000046363	ENSBTAG00000047200	ENSBTAG00000047766
ENSBTAG00000044073	ENSBTAG00000045889	ENSBTAG00000046396	ENSBTAG00000047202	ENSBTAG00000047780
ENSBTAG00000044075	ENSBTAG00000045904	ENSBTAG00000046419	ENSBTAG00000047206	ENSBTAG00000047809
ENSBTAG00000044083	ENSBTAG00000045965	ENSBTAG00000046467	ENSBTAG00000047216	ENSBTAG00000047845
ENSBTAG00000044117	ENSBTAG00000045966	ENSBTAG00000046533	ENSBTAG00000047218	ENSBTAG00000047879
ENSBTAG00000044123	ENSBTAG00000045981	ENSBTAG00000046547	ENSBTAG00000047219	ENSBTAG00000047904
ENSBTAG00000044125	ENSBTAG00000045986	ENSBTAG00000046586	ENSBTAG00000047260	ENSBTAG00000047942
ENSBTAG00000044126	ENSBTAG00000045997	ENSBTAG00000046625	ENSBTAG00000047277	ENSBTAG00000047955
ENSBTAG00000044236	ENSBTAG00000046010	ENSBTAG00000046649	ENSBTAG00000047330	ENSBTAG00000047957
ENSBTAG00000044427	ENSBTAG00000046024	ENSBTAG00000046662	ENSBTAG00000047351	ENSBTAG00000047966
ENSBTAG00000044478	ENSBTAG00000046033	ENSBTAG00000046664	ENSBTAG00000047389	ENSBTAG00000047996
ENSBTAG00000044606	ENSBTAG00000046049	ENSBTAG00000046678	ENSBTAG00000047412	ENSBTAG00000048022
ENSBTAG00000044812	ENSBTAG00000046054	ENSBTAG00000046703	ENSBTAG00000047420	ENSBTAG00000048023
ENSBTAG00000044853	ENSBTAG00000046062	ENSBTAG00000046712	ENSBTAG00000047426	ENSBTAG00000048034
ENSBTAG00000045492	ENSBTAG00000046076	ENSBTAG00000046750	ENSBTAG00000047467	ENSBTAG00000048050
ENSBTAG00000045495	ENSBTAG00000046117	ENSBTAG00000046753	ENSBTAG00000047481	ENSBTAG00000048080
ENSBTAG00000045498	ENSBTAG00000046165	ENSBTAG00000046783	ENSBTAG00000047483	ENSBTAG00000048154
ENSBTAG00000045531	ENSBTAG00000046177	ENSBTAG00000046788	ENSBTAG00000047491	ENSBTAG00000048203
ENSBTAG00000045532	ENSBTAG00000046220	ENSBTAG00000046794	ENSBTAG00000047510	ENSBTAG00000048204
ENSBTAG00000045548	ENSBTAG00000046231	ENSBTAG00000046803	ENSBTAG00000047514	ENSBTAG00000048226
ENSBTAG00000045574	ENSBTAG00000046232	ENSBTAG00000046852	ENSBTAG00000047520	ENSBTAG00000048269
ENSBTAG00000045584	ENSBTAG00000046235	ENSBTAG00000046900	ENSBTAG00000047587	ENSBTAG00000048280
ENSBTAG00000045601	ENSBTAG00000046282	ENSBTAG00000046922	ENSBTAG00000047591	ENSBTAG00000048308
ENSBTAG00000045602	ENSBTAG00000046303	ENSBTAG00000046984	ENSBTAG00000047604	
ENSBTAG00000045608	ENSBTAG00000046307	ENSBTAG00000047022	ENSBTAG00000047625	
ENSBTAG00000045643	ENSBTAG00000046308	ENSBTAG00000047027	ENSBTAG00000047626	
ENSBTAG00000045652	ENSBTAG00000046309	ENSBTAG00000047073	ENSBTAG00000047628	

APPENDIX A.2

DEGs and Tissue-Specific Genes of Brain



Table A.2. Differentially expressed and tissue-specific (in bold) genes of brain.

ENSBTAG00000000005	ENSBTAG00000000212	ENSBTAG00000000374	ENSBTAG00000000555	ENSBTAG00000000719
ENSBTAG00000000013	ENSBTAG00000000213	ENSBTAG00000000377	ENSBTAG00000000558	ENSBTAG00000000720
ENSBTAG00000000016	ENSBTAG00000000215	ENSBTAG00000000381	ENSBTAG00000000560	ENSBTAG00000000731
ENSBTAG00000000019	ENSBTAG00000000219	ENSBTAG00000000392	ENSBTAG00000000563	ENSBTAG00000000735
ENSBTAG00000000022	ENSBTAG00000000220	ENSBTAG00000000393	ENSBTAG00000000564	ENSBTAG00000000736
ENSBTAG00000000025	ENSBTAG00000000221	ENSBTAG00000000394	ENSBTAG00000000569	ENSBTAG00000000737
ENSBTAG00000000029	ENSBTAG00000000232	ENSBTAG00000000399	ENSBTAG00000000581	ENSBTAG00000000738
ENSBTAG00000000030	ENSBTAG00000000233	ENSBTAG00000000405	ENSBTAG00000000585	ENSBTAG00000000742
ENSBTAG00000000056	ENSBTAG00000000236	ENSBTAG00000000406	ENSBTAG00000000589	ENSBTAG00000000745
ENSBTAG00000000061	ENSBTAG00000000238	ENSBTAG00000000409	ENSBTAG00000000593	ENSBTAG00000000754
ENSBTAG00000000062	ENSBTAG00000000241	ENSBTAG00000000414	ENSBTAG00000000595	ENSBTAG00000000755
ENSBTAG00000000065	ENSBTAG00000000242	ENSBTAG00000000418	ENSBTAG00000000601	ENSBTAG00000000764
ENSBTAG00000000072	ENSBTAG00000000243	ENSBTAG00000000423	ENSBTAG00000000604	ENSBTAG00000000770
ENSBTAG00000000073	ENSBTAG00000000244	ENSBTAG00000000426	ENSBTAG00000000606	ENSBTAG00000000781
ENSBTAG00000000077	ENSBTAG00000000246	ENSBTAG00000000436	ENSBTAG00000000609	ENSBTAG00000000782
ENSBTAG00000000078	ENSBTAG00000000251	ENSBTAG00000000437	ENSBTAG00000000613	ENSBTAG00000000783
ENSBTAG00000000079	ENSBTAG00000000252	ENSBTAG00000000442	ENSBTAG00000000622	ENSBTAG00000000784
ENSBTAG00000000082	ENSBTAG00000000257	ENSBTAG00000000458	ENSBTAG00000000626	ENSBTAG00000000785
ENSBTAG00000000085	ENSBTAG00000000260	ENSBTAG00000000459	ENSBTAG00000000630	ENSBTAG00000000791
ENSBTAG00000000088	ENSBTAG00000000261	ENSBTAG00000000460	ENSBTAG00000000634	ENSBTAG00000000792
ENSBTAG00000000092	ENSBTAG00000000265	ENSBTAG00000000476	ENSBTAG00000000640	ENSBTAG00000000795
ENSBTAG00000000095	ENSBTAG00000000275	ENSBTAG00000000483	ENSBTAG00000000641	ENSBTAG00000000802
ENSBTAG00000000102	ENSBTAG00000000277	ENSBTAG00000000484	ENSBTAG00000000642	ENSBTAG00000000813
ENSBTAG00000000105	ENSBTAG00000000279	ENSBTAG00000000489	ENSBTAG00000000648	ENSBTAG00000000815
ENSBTAG00000000108	ENSBTAG00000000291	ENSBTAG00000000490	ENSBTAG00000000653	ENSBTAG00000000816
ENSBTAG00000000109	ENSBTAG00000000292	ENSBTAG00000000501	ENSBTAG00000000656	ENSBTAG00000000817
ENSBTAG00000000111	ENSBTAG00000000297	ENSBTAG00000000504	ENSBTAG00000000658	ENSBTAG00000000818
ENSBTAG00000000115	ENSBTAG00000000300	ENSBTAG00000000505	ENSBTAG00000000664	ENSBTAG00000000819
ENSBTAG00000000120	ENSBTAG00000000306	ENSBTAG00000000507	ENSBTAG00000000667	ENSBTAG00000000820
ENSBTAG00000000133	ENSBTAG00000000309	ENSBTAG00000000516	ENSBTAG00000000671	ENSBTAG00000000821
ENSBTAG00000000139	ENSBTAG00000000310	ENSBTAG00000000517	ENSBTAG00000000672	ENSBTAG00000000824
ENSBTAG00000000144	ENSBTAG00000000312	ENSBTAG00000000518	ENSBTAG00000000676	ENSBTAG00000000828
ENSBTAG00000000152	ENSBTAG00000000315	ENSBTAG00000000520	ENSBTAG00000000678	ENSBTAG00000000829
ENSBTAG00000000153	ENSBTAG00000000317	ENSBTAG00000000529	ENSBTAG00000000679	ENSBTAG00000000833
ENSBTAG00000000162	ENSBTAG00000000322	ENSBTAG00000000534	ENSBTAG00000000683	ENSBTAG00000000835
ENSBTAG00000000163	ENSBTAG00000000329	ENSBTAG00000000535	ENSBTAG00000000687	ENSBTAG00000000836
ENSBTAG00000000172	ENSBTAG00000000330	ENSBTAG00000000536	ENSBTAG00000000696	ENSBTAG00000000841
ENSBTAG00000000176	ENSBTAG00000000333	ENSBTAG00000000539	ENSBTAG00000000700	ENSBTAG00000000842
ENSBTAG00000000179	ENSBTAG00000000345	ENSBTAG00000000540	ENSBTAG00000000704	ENSBTAG00000000845
ENSBTAG00000000183	ENSBTAG00000000354	ENSBTAG00000000541	ENSBTAG00000000706	ENSBTAG00000000851
ENSBTAG00000000188	ENSBTAG00000000355	ENSBTAG00000000542	ENSBTAG00000000707	ENSBTAG00000000859
ENSBTAG00000000189	ENSBTAG00000000356	ENSBTAG00000000546	ENSBTAG00000000710	ENSBTAG00000000874
ENSBTAG00000000191	ENSBTAG00000000371	ENSBTAG00000000551	ENSBTAG00000000715	ENSBTAG00000000875
ENSBTAG00000000205	ENSBTAG00000000372	ENSBTAG00000000552	ENSBTAG00000000718	ENSBTAG00000000877

ENSBTAG00000000880	ENSBTAG000000001041	ENSBTAG000000001219	ENSBTAG000000001417	ENSBTAG000000001631
ENSBTAG00000000892	ENSBTAG000000001043	ENSBTAG000000001228	ENSBTAG000000001420	ENSBTAG000000001640
ENSBTAG00000000897	ENSBTAG000000001049	ENSBTAG000000001235	ENSBTAG000000001422	ENSBTAG000000001660
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ENSBTAG00000000905	ENSBTAG000000001057	ENSBTAG000000001243	ENSBTAG000000001450	ENSBTAG000000001675
ENSBTAG00000000908	ENSBTAG000000001061	ENSBTAG000000001249	ENSBTAG000000001455	ENSBTAG000000001683
ENSBTAG00000000910	ENSBTAG000000001063	ENSBTAG000000001252	ENSBTAG000000001462	ENSBTAG000000001687
ENSBTAG00000000914	ENSBTAG000000001066	ENSBTAG000000001254	ENSBTAG000000001463	ENSBTAG000000001694
ENSBTAG00000000925	ENSBTAG000000001067	ENSBTAG000000001262	ENSBTAG000000001474	ENSBTAG000000001703
ENSBTAG00000000930	ENSBTAG000000001069	ENSBTAG000000001279	ENSBTAG000000001475	ENSBTAG000000001710
ENSBTAG00000000933	ENSBTAG000000001075	ENSBTAG000000001280	ENSBTAG000000001476	ENSBTAG000000001712
ENSBTAG00000000941	ENSBTAG000000001078	ENSBTAG000000001290	ENSBTAG000000001477	ENSBTAG000000001721
ENSBTAG00000000944	ENSBTAG000000001079	ENSBTAG000000001294	ENSBTAG000000001478	ENSBTAG000000001724
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ENSBTAG00000000949	ENSBTAG000000001083	ENSBTAG000000001302	ENSBTAG000000001491	ENSBTAG000000001729
ENSBTAG00000000951	ENSBTAG000000001092	ENSBTAG000000001303	ENSBTAG000000001498	ENSBTAG000000001731
ENSBTAG00000000957	ENSBTAG000000001094	ENSBTAG000000001305	ENSBTAG000000001503	ENSBTAG000000001735
ENSBTAG00000000958	ENSBTAG000000001097	ENSBTAG000000001321	ENSBTAG000000001505	ENSBTAG000000001737
ENSBTAG00000000962	ENSBTAG000000001099	ENSBTAG000000001323	ENSBTAG000000001508	ENSBTAG000000001739
ENSBTAG00000000964	ENSBTAG000000001104	ENSBTAG000000001324	ENSBTAG000000001509	ENSBTAG000000001745
ENSBTAG00000000966	ENSBTAG000000001105	ENSBTAG000000001326	ENSBTAG000000001510	ENSBTAG000000001751
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ENSBTAG00000000973	ENSBTAG000000001112	ENSBTAG000000001333	ENSBTAG000000001514	ENSBTAG000000001764
ENSBTAG00000000977	ENSBTAG000000001114	ENSBTAG000000001335	ENSBTAG000000001516	ENSBTAG000000001765
ENSBTAG00000000979	ENSBTAG000000001116	ENSBTAG000000001338	ENSBTAG000000001517	ENSBTAG000000001770
ENSBTAG00000000983	ENSBTAG000000001119	ENSBTAG000000001344	ENSBTAG000000001518	ENSBTAG000000001775
ENSBTAG00000000987	ENSBTAG000000001125	ENSBTAG000000001346	ENSBTAG000000001522	ENSBTAG000000001785
ENSBTAG00000000991	ENSBTAG000000001128	ENSBTAG000000001350	ENSBTAG000000001527	ENSBTAG000000001786
ENSBTAG00000000995	ENSBTAG000000001133	ENSBTAG000000001352	ENSBTAG000000001537	ENSBTAG000000001793
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ENSBTAG000000001002	ENSBTAG000000001141	ENSBTAG000000001356	ENSBTAG000000001539	ENSBTAG000000001804
ENSBTAG000000001003	ENSBTAG000000001143	ENSBTAG000000001359	ENSBTAG000000001546	ENSBTAG000000001806
ENSBTAG000000001004	ENSBTAG000000001151	ENSBTAG000000001364	ENSBTAG000000001568	ENSBTAG000000001812
ENSBTAG000000001007	ENSBTAG000000001152	ENSBTAG000000001365	ENSBTAG000000001575	ENSBTAG000000001815
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ENSBTAG000000001019	ENSBTAG000000001161	ENSBTAG000000001368	ENSBTAG000000001580	ENSBTAG000000001822
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ENSBTAG000000001026	ENSBTAG000000001183	ENSBTAG000000001396	ENSBTAG000000001599	ENSBTAG000000001832
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ENSBTAG00000002937	ENSBTAG00000003143	ENSBTAG00000003383	ENSBTAG00000003557	ENSBTAG00000003762
ENSBTAG00000002938	ENSBTAG00000003147	ENSBTAG00000003387	ENSBTAG00000003560	ENSBTAG00000003763
ENSBTAG00000002939	ENSBTAG00000003152	ENSBTAG00000003392	ENSBTAG00000003566	ENSBTAG00000003771
ENSBTAG00000002941	ENSBTAG00000003155	ENSBTAG00000003393	ENSBTAG00000003567	ENSBTAG00000003776
ENSBTAG00000002947	ENSBTAG00000003161	ENSBTAG00000003396	ENSBTAG00000003569	ENSBTAG00000003779
ENSBTAG00000002950	ENSBTAG00000003165	ENSBTAG00000003398	ENSBTAG00000003574	ENSBTAG00000003784
ENSBTAG00000002953	ENSBTAG00000003168	ENSBTAG00000003405	ENSBTAG00000003575	ENSBTAG00000003793
ENSBTAG00000002959	ENSBTAG00000003171	ENSBTAG00000003408	ENSBTAG00000003577	ENSBTAG00000003794
ENSBTAG00000002962	ENSBTAG00000003172	ENSBTAG00000003409	ENSBTAG00000003578	ENSBTAG00000003800
ENSBTAG00000002964	ENSBTAG00000003176	ENSBTAG00000003414	ENSBTAG00000003580	ENSBTAG00000003806
ENSBTAG00000002971	ENSBTAG00000003185	ENSBTAG00000003418	ENSBTAG00000003581	ENSBTAG00000003807
ENSBTAG00000002974	ENSBTAG00000003191	ENSBTAG00000003423	ENSBTAG00000003589	ENSBTAG00000003809
ENSBTAG00000002977	ENSBTAG00000003196	ENSBTAG00000003434	ENSBTAG00000003592	ENSBTAG00000003825
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ENSBTAG00000003014	ENSBTAG00000003238	ENSBTAG00000003446	ENSBTAG00000003625	ENSBTAG00000003843
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ENSBTAG00000003018	ENSBTAG00000003255	ENSBTAG00000003454	ENSBTAG00000003649	ENSBTAG00000003851
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ENSBTAG00000003036	ENSBTAG00000003296	ENSBTAG00000003474	ENSBTAG00000003669	ENSBTAG00000003871
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ENSBTAG00000003076	ENSBTAG00000003329	ENSBTAG00000003500	ENSBTAG00000003711	ENSBTAG00000003915
ENSBTAG00000003079	ENSBTAG00000003341	ENSBTAG00000003502	ENSBTAG00000003718	ENSBTAG00000003919
ENSBTAG00000003081	ENSBTAG00000003349	ENSBTAG00000003503	ENSBTAG00000003719	ENSBTAG00000003921
ENSBTAG00000003083	ENSBTAG00000003352	ENSBTAG00000003505	ENSBTAG00000003721	ENSBTAG00000003922
ENSBTAG00000003098	ENSBTAG00000003358	ENSBTAG00000003510	ENSBTAG00000003724	ENSBTAG00000003923
ENSBTAG00000003100	ENSBTAG00000003361	ENSBTAG00000003511	ENSBTAG00000003726	ENSBTAG00000003925
ENSBTAG00000003107	ENSBTAG00000003366	ENSBTAG00000003521	ENSBTAG00000003737	ENSBTAG00000003935
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ENSBTAG00000046586	ENSBTAG00000046886	ENSBTAG00000047138	ENSBTAG00000047432	ENSBTAG00000047670
ENSBTAG00000046590	ENSBTAG00000046912	ENSBTAG00000047144	ENSBTAG00000047434	ENSBTAG00000047676
ENSBTAG00000046597	ENSBTAG00000046915	ENSBTAG00000047148	ENSBTAG00000047443	ENSBTAG00000047700

ENSBTAG00000047703	ENSBTAG00000047842	ENSBTAG00000047962	ENSBTAG00000048086	ENSBTAG00000048177
ENSBTAG00000047708	ENSBTAG00000047862	ENSBTAG00000047977	ENSBTAG00000048089	ENSBTAG00000048179
ENSBTAG00000047712	ENSBTAG00000047863	ENSBTAG00000047979	ENSBTAG00000048097	ENSBTAG00000048195
ENSBTAG00000047719	ENSBTAG00000047868	ENSBTAG00000047986	ENSBTAG00000048098	ENSBTAG00000048210
ENSBTAG00000047743	ENSBTAG00000047869	ENSBTAG00000047991	ENSBTAG00000048112	ENSBTAG00000048229
ENSBTAG00000047747	ENSBTAG00000047873	ENSBTAG00000047997	ENSBTAG00000048114	ENSBTAG00000048230
ENSBTAG00000047752	ENSBTAG00000047876	ENSBTAG00000047998	ENSBTAG00000048118	ENSBTAG00000048237
ENSBTAG00000047754	ENSBTAG00000047877	ENSBTAG00000048004	ENSBTAG00000048119	ENSBTAG00000048246
ENSBTAG00000047767	ENSBTAG00000047879	ENSBTAG00000048005	ENSBTAG00000048121	ENSBTAG00000048253
ENSBTAG00000047783	ENSBTAG00000047880	ENSBTAG00000048007	ENSBTAG00000048122	ENSBTAG00000048263
ENSBTAG00000047787	ENSBTAG00000047881	ENSBTAG00000048008	ENSBTAG00000048135	ENSBTAG00000048264
ENSBTAG00000047789	ENSBTAG00000047894	ENSBTAG00000048011	ENSBTAG00000048142	ENSBTAG00000048267
ENSBTAG00000047807	ENSBTAG00000047902	ENSBTAG00000048014	ENSBTAG00000048145	ENSBTAG00000048268
ENSBTAG00000047810	ENSBTAG00000047904	ENSBTAG00000048020	ENSBTAG00000048153	ENSBTAG00000048269
ENSBTAG00000047816	ENSBTAG00000047908	ENSBTAG00000048030	ENSBTAG00000048155	ENSBTAG00000048275
ENSBTAG00000047818	ENSBTAG00000047910	ENSBTAG00000048048	ENSBTAG00000048156	ENSBTAG00000048312
ENSBTAG00000047821	ENSBTAG00000047942	ENSBTAG00000048049	ENSBTAG00000048157	ENSBTAG00000048314
ENSBTAG00000047823	ENSBTAG00000047944	ENSBTAG00000048061	ENSBTAG00000048161	
ENSBTAG00000047827	ENSBTAG00000047947	ENSBTAG00000048062	ENSBTAG00000048162	
ENSBTAG00000047830	ENSBTAG00000047954	ENSBTAG00000048067	ENSBTAG00000048170	
ENSBTAG00000047831	ENSBTAG00000047956	ENSBTAG00000048077	ENSBTAG00000048173	

APPENDIX A.3

DEGs and Tissue-Specific Genes of Endometrium



Table A.3. Differentially expressed and tissue-specific (in bold) genes of endometrium.

ENSBTAG0000000009	ENSBTAG00000000281	ENSBTAG00000000550	ENSBTAG00000000851	ENSBTAG00000001101
ENSBTAG00000000011	ENSBTAG00000000283	ENSBTAG00000000563	ENSBTAG00000000854	ENSBTAG00000001108
ENSBTAG00000000015	ENSBTAG00000000286	ENSBTAG00000000564	ENSBTAG00000000873	ENSBTAG00000001110
ENSBTAG00000000020	ENSBTAG00000000288	ENSBTAG00000000569	ENSBTAG00000000877	ENSBTAG00000001120
ENSBTAG00000000025	ENSBTAG00000000306	ENSBTAG00000000582	ENSBTAG00000000878	ENSBTAG00000001125
ENSBTAG00000000031	ENSBTAG00000000313	ENSBTAG00000000589	ENSBTAG00000000885	ENSBTAG00000001133
ENSBTAG00000000033	ENSBTAG00000000317	ENSBTAG00000000595	ENSBTAG00000000894	ENSBTAG00000001136
ENSBTAG00000000040	ENSBTAG00000000328	ENSBTAG00000000598	ENSBTAG00000000908	ENSBTAG00000001139
ENSBTAG00000000044	ENSBTAG00000000345	ENSBTAG00000000605	ENSBTAG00000000910	ENSBTAG00000001143
ENSBTAG00000000053	ENSBTAG00000000359	ENSBTAG00000000607	ENSBTAG00000000913	ENSBTAG00000001146
ENSBTAG00000000061	ENSBTAG00000000374	ENSBTAG00000000625	ENSBTAG00000000928	ENSBTAG00000001151
ENSBTAG00000000071	ENSBTAG00000000376	ENSBTAG00000000634	ENSBTAG00000000936	ENSBTAG00000001153
ENSBTAG00000000074	ENSBTAG00000000377	ENSBTAG00000000641	ENSBTAG00000000943	ENSBTAG00000001154
ENSBTAG00000000084	ENSBTAG00000000380	ENSBTAG00000000646	ENSBTAG00000000954	ENSBTAG00000001161
ENSBTAG00000000088	ENSBTAG00000000394	ENSBTAG00000000647	ENSBTAG00000000961	ENSBTAG00000001165
ENSBTAG00000000090	ENSBTAG00000000395	ENSBTAG00000000648	ENSBTAG00000000977	ENSBTAG00000001173
ENSBTAG00000000091	ENSBTAG00000000406	ENSBTAG00000000658	ENSBTAG00000000979	ENSBTAG00000001183
ENSBTAG00000000092	ENSBTAG00000000411	ENSBTAG00000000671	ENSBTAG00000000982	ENSBTAG00000001186
ENSBTAG00000000094	ENSBTAG00000000414	ENSBTAG00000000678	ENSBTAG00000000983	ENSBTAG00000001187
ENSBTAG00000000102	ENSBTAG00000000418	ENSBTAG00000000684	ENSBTAG00000000986	ENSBTAG00000001189
ENSBTAG00000000103	ENSBTAG00000000421	ENSBTAG00000000686	ENSBTAG00000000987	ENSBTAG00000001195
ENSBTAG00000000105	ENSBTAG00000000431	ENSBTAG00000000695	ENSBTAG00000001003	ENSBTAG00000001197
ENSBTAG00000000111	ENSBTAG00000000432	ENSBTAG00000000698	ENSBTAG00000001004	ENSBTAG00000001198
ENSBTAG00000000139	ENSBTAG00000000434	ENSBTAG00000000699	ENSBTAG00000001008	ENSBTAG00000001219
ENSBTAG00000000144	ENSBTAG00000000439	ENSBTAG00000000707	ENSBTAG00000001009	ENSBTAG00000001221
ENSBTAG00000000156	ENSBTAG00000000440	ENSBTAG00000000720	ENSBTAG00000001013	ENSBTAG00000001228
ENSBTAG00000000172	ENSBTAG00000000442	ENSBTAG00000000735	ENSBTAG00000001021	ENSBTAG00000001229
ENSBTAG00000000182	ENSBTAG00000000451	ENSBTAG00000000737	ENSBTAG00000001028	ENSBTAG00000001233
ENSBTAG00000000183	ENSBTAG00000000454	ENSBTAG00000000746	ENSBTAG00000001032	ENSBTAG00000001244
ENSBTAG00000000184	ENSBTAG00000000459	ENSBTAG00000000778	ENSBTAG00000001036	ENSBTAG00000001262
ENSBTAG00000000186	ENSBTAG00000000473	ENSBTAG00000000781	ENSBTAG00000001049	ENSBTAG00000001274
ENSBTAG00000000188	ENSBTAG00000000478	ENSBTAG00000000791	ENSBTAG00000001052	ENSBTAG00000001280
ENSBTAG00000000191	ENSBTAG00000000507	ENSBTAG00000000793	ENSBTAG00000001058	ENSBTAG00000001290
ENSBTAG00000000198	ENSBTAG00000000511	ENSBTAG00000000795	ENSBTAG00000001059	ENSBTAG00000001296
ENSBTAG00000000199	ENSBTAG00000000512	ENSBTAG00000000797	ENSBTAG00000001060	ENSBTAG00000001299
ENSBTAG00000000223	ENSBTAG00000000516	ENSBTAG00000000799	ENSBTAG00000001061	ENSBTAG00000001302
ENSBTAG00000000241	ENSBTAG00000000518	ENSBTAG00000000801	ENSBTAG00000001069	ENSBTAG00000001303
ENSBTAG00000000244	ENSBTAG00000000520	ENSBTAG00000000802	ENSBTAG00000001077	ENSBTAG00000001305
ENSBTAG00000000246	ENSBTAG00000000522	ENSBTAG00000000807	ENSBTAG00000001078	ENSBTAG00000001333
ENSBTAG00000000251	ENSBTAG00000000524	ENSBTAG00000000809	ENSBTAG00000001080	ENSBTAG00000001335
ENSBTAG00000000258	ENSBTAG00000000527	ENSBTAG00000000813	ENSBTAG00000001083	ENSBTAG00000001341
ENSBTAG00000000260	ENSBTAG00000000539	ENSBTAG00000000815	ENSBTAG00000001086	ENSBTAG00000001342
ENSBTAG00000000265	ENSBTAG00000000546	ENSBTAG00000000816	ENSBTAG00000001094	ENSBTAG00000001344
ENSBTAG00000000279	ENSBTAG00000000548	ENSBTAG00000000843	ENSBTAG00000001100	ENSBTAG00000001349

ENSBTAG00000001353	ENSBTAG00000001617	ENSBTAG00000001868	ENSBTAG00000002095	ENSBTAG00000002385
ENSBTAG00000001356	ENSBTAG00000001618	ENSBTAG00000001870	ENSBTAG00000002098	ENSBTAG00000002392
ENSBTAG00000001361	ENSBTAG00000001623	ENSBTAG00000001872	ENSBTAG00000002101	ENSBTAG00000002402
ENSBTAG00000001365	ENSBTAG00000001629	ENSBTAG00000001874	ENSBTAG00000002107	ENSBTAG00000002404
ENSBTAG00000001385	ENSBTAG00000001631	ENSBTAG00000001879	ENSBTAG00000002116	ENSBTAG00000002408
ENSBTAG00000001388	ENSBTAG00000001639	ENSBTAG00000001880	ENSBTAG00000002117	ENSBTAG00000002414
ENSBTAG00000001390	ENSBTAG00000001649	ENSBTAG00000001886	ENSBTAG00000002127	ENSBTAG00000002416
ENSBTAG00000001392	ENSBTAG00000001654	ENSBTAG00000001901	ENSBTAG00000002129	ENSBTAG00000002427
ENSBTAG00000001398	ENSBTAG00000001656	ENSBTAG00000001903	ENSBTAG00000002135	ENSBTAG00000002434
ENSBTAG00000001400	ENSBTAG00000001659	ENSBTAG00000001908	ENSBTAG00000002145	ENSBTAG00000002444
ENSBTAG00000001417	ENSBTAG00000001692	ENSBTAG00000001912	ENSBTAG00000002151	ENSBTAG00000002448
ENSBTAG00000001419	ENSBTAG00000001696	ENSBTAG00000001918	ENSBTAG00000002157	ENSBTAG00000002450
ENSBTAG00000001424	ENSBTAG00000001698	ENSBTAG00000001926	ENSBTAG00000002163	ENSBTAG00000002451
ENSBTAG00000001446	ENSBTAG00000001703	ENSBTAG00000001932	ENSBTAG00000002170	ENSBTAG00000002452
ENSBTAG00000001457	ENSBTAG00000001704	ENSBTAG00000001936	ENSBTAG00000002178	ENSBTAG00000002460
ENSBTAG00000001462	ENSBTAG00000001706	ENSBTAG00000001941	ENSBTAG00000002191	ENSBTAG00000002464
ENSBTAG00000001465	ENSBTAG00000001712	ENSBTAG00000001956	ENSBTAG00000002194	ENSBTAG00000002469
ENSBTAG00000001468	ENSBTAG00000001717	ENSBTAG00000001961	ENSBTAG00000002199	ENSBTAG00000002471
ENSBTAG00000001473	ENSBTAG00000001721	ENSBTAG00000001966	ENSBTAG00000002203	ENSBTAG00000002472
ENSBTAG00000001481	ENSBTAG00000001728	ENSBTAG00000001969	ENSBTAG00000002205	ENSBTAG00000002473
ENSBTAG00000001492	ENSBTAG00000001729	ENSBTAG00000001975	ENSBTAG00000002214	ENSBTAG00000002475
ENSBTAG00000001497	ENSBTAG00000001739	ENSBTAG00000001979	ENSBTAG00000002216	ENSBTAG00000002479
ENSBTAG00000001503	ENSBTAG00000001741	ENSBTAG00000001981	ENSBTAG00000002220	ENSBTAG00000002481
ENSBTAG00000001511	ENSBTAG00000001747	ENSBTAG00000001983	ENSBTAG00000002226	ENSBTAG00000002483
ENSBTAG00000001512	ENSBTAG00000001752	ENSBTAG00000002000	ENSBTAG00000002238	ENSBTAG00000002485
ENSBTAG00000001514	ENSBTAG00000001753	ENSBTAG00000002008	ENSBTAG00000002240	ENSBTAG00000002490
ENSBTAG00000001520	ENSBTAG00000001764	ENSBTAG00000002011	ENSBTAG00000002255	ENSBTAG00000002492
ENSBTAG00000001521	ENSBTAG00000001772	ENSBTAG00000002019	ENSBTAG00000002259	ENSBTAG00000002495
ENSBTAG00000001522	ENSBTAG00000001773	ENSBTAG00000002023	ENSBTAG00000002261	ENSBTAG00000002500
ENSBTAG00000001527	ENSBTAG00000001775	ENSBTAG00000002024	ENSBTAG00000002266	ENSBTAG00000002503
ENSBTAG00000001545	ENSBTAG00000001776	ENSBTAG00000002030	ENSBTAG00000002280	ENSBTAG00000002505
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ENSBTAG00000001562	ENSBTAG00000001783	ENSBTAG00000002034	ENSBTAG00000002294	ENSBTAG00000002515
ENSBTAG00000001564	ENSBTAG00000001788	ENSBTAG00000002036	ENSBTAG00000002298	ENSBTAG00000002550
ENSBTAG00000001565	ENSBTAG00000001795	ENSBTAG00000002041	ENSBTAG00000002319	ENSBTAG00000002563
ENSBTAG00000001567	ENSBTAG00000001805	ENSBTAG00000002042	ENSBTAG00000002323	ENSBTAG00000002568
ENSBTAG00000001574	ENSBTAG00000001808	ENSBTAG00000002044	ENSBTAG00000002332	ENSBTAG00000002574
ENSBTAG00000001576	ENSBTAG00000001816	ENSBTAG00000002046	ENSBTAG00000002341	ENSBTAG00000002580
ENSBTAG00000001578	ENSBTAG00000001817	ENSBTAG00000002049	ENSBTAG00000002344	ENSBTAG00000002586
ENSBTAG00000001585	ENSBTAG00000001828	ENSBTAG00000002065	ENSBTAG00000002348	ENSBTAG00000002610
ENSBTAG00000001592	ENSBTAG00000001836	ENSBTAG00000002069	ENSBTAG00000002352	ENSBTAG00000002613
ENSBTAG00000001599	ENSBTAG00000001838	ENSBTAG00000002076	ENSBTAG00000002355	ENSBTAG00000002624
ENSBTAG00000001601	ENSBTAG00000001855	ENSBTAG00000002083	ENSBTAG00000002357	ENSBTAG00000002631
ENSBTAG00000001603	ENSBTAG00000001864	ENSBTAG00000002084	ENSBTAG00000002367	ENSBTAG00000002633
ENSBTAG00000001604	ENSBTAG00000001865	ENSBTAG00000002092	ENSBTAG00000002369	ENSBTAG00000002640
ENSBTAG00000001609	ENSBTAG00000001866	ENSBTAG00000002094	ENSBTAG00000002376	ENSBTAG00000002644

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ENSBTAG00000002655	ENSBTAG00000002959	ENSBTAG00000003297	ENSBTAG00000003610	ENSBTAG00000003919
ENSBTAG00000002664	ENSBTAG00000002962	ENSBTAG00000003301	ENSBTAG00000003622	ENSBTAG00000003921
ENSBTAG00000002670	ENSBTAG00000002971	ENSBTAG00000003307	ENSBTAG00000003624	ENSBTAG00000003935
ENSBTAG00000002680	ENSBTAG00000002978	ENSBTAG00000003313	ENSBTAG00000003632	ENSBTAG00000003936
ENSBTAG00000002691	ENSBTAG00000002979	ENSBTAG00000003319	ENSBTAG00000003634	ENSBTAG00000003948
ENSBTAG00000002702	ENSBTAG00000002983	ENSBTAG00000003321	ENSBTAG00000003644	ENSBTAG00000003956
ENSBTAG00000002704	ENSBTAG00000003000	ENSBTAG00000003322	ENSBTAG00000003658	ENSBTAG00000003959
ENSBTAG00000002708	ENSBTAG00000003002	ENSBTAG00000003329	ENSBTAG00000003667	ENSBTAG00000003961
ENSBTAG00000002709	ENSBTAG00000003006	ENSBTAG00000003332	ENSBTAG00000003668	ENSBTAG00000003966
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ENSBTAG00000002744	ENSBTAG00000003038	ENSBTAG00000003396	ENSBTAG00000003728	ENSBTAG00000003997
ENSBTAG00000002749	ENSBTAG00000003039	ENSBTAG00000003403	ENSBTAG00000003741	ENSBTAG00000004005
ENSBTAG00000002770	ENSBTAG00000003045	ENSBTAG00000003408	ENSBTAG00000003746	ENSBTAG00000004013
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ENSBTAG00000002784	ENSBTAG00000003072	ENSBTAG00000003425	ENSBTAG00000003763	ENSBTAG00000004021
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ENSBTAG00000002810	ENSBTAG00000003101	ENSBTAG00000003457	ENSBTAG00000003773	ENSBTAG00000004038
ENSBTAG00000002820	ENSBTAG00000003120	ENSBTAG00000003458	ENSBTAG00000003777	ENSBTAG00000004048
ENSBTAG00000002821	ENSBTAG00000003124	ENSBTAG00000003476	ENSBTAG00000003786	ENSBTAG00000004051
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ENSBTAG00000002848	ENSBTAG00000003180	ENSBTAG00000003509	ENSBTAG00000003809	ENSBTAG00000004086
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ENSBTAG00000002863	ENSBTAG00000003202	ENSBTAG00000003512	ENSBTAG00000003826	ENSBTAG00000004093
ENSBTAG00000002880	ENSBTAG00000003209	ENSBTAG00000003515	ENSBTAG00000003827	ENSBTAG00000004095
ENSBTAG00000002882	ENSBTAG00000003217	ENSBTAG00000003519	ENSBTAG00000003833	ENSBTAG00000004098
ENSBTAG00000002883	ENSBTAG00000003232	ENSBTAG00000003539	ENSBTAG00000003835	ENSBTAG00000004099
ENSBTAG00000002896	ENSBTAG00000003237	ENSBTAG00000003540	ENSBTAG00000003837	ENSBTAG00000004112
ENSBTAG00000002898	ENSBTAG00000003238	ENSBTAG00000003543	ENSBTAG00000003856	ENSBTAG00000004118
ENSBTAG00000002910	ENSBTAG00000003245	ENSBTAG00000003552	ENSBTAG00000003864	ENSBTAG00000004126
ENSBTAG00000002914	ENSBTAG00000003255	ENSBTAG00000003555	ENSBTAG00000003871	ENSBTAG00000004129
ENSBTAG00000002918	ENSBTAG00000003257	ENSBTAG00000003556	ENSBTAG00000003877	ENSBTAG00000004135
ENSBTAG00000002922	ENSBTAG00000003265	ENSBTAG00000003565	ENSBTAG00000003882	ENSBTAG00000004159
ENSBTAG00000002924	ENSBTAG00000003275	ENSBTAG00000003579	ENSBTAG00000003889	ENSBTAG00000004165
ENSBTAG00000002931	ENSBTAG00000003278	ENSBTAG00000003581	ENSBTAG00000003891	ENSBTAG00000004167
ENSBTAG00000002939	ENSBTAG00000003279	ENSBTAG00000003594	ENSBTAG00000003901	ENSBTAG00000004168
ENSBTAG00000002940	ENSBTAG00000003280	ENSBTAG00000003595	ENSBTAG00000003904	ENSBTAG00000004176

ENSBTAG00000004178	ENSBTAG00000004514	ENSBTAG00000004834	ENSBTAG00000005049	ENSBTAG00000005288
ENSBTAG00000004184	ENSBTAG00000004518	ENSBTAG00000004836	ENSBTAG00000005063	ENSBTAG00000005293
ENSBTAG00000004189	ENSBTAG00000004555	ENSBTAG00000004838	ENSBTAG00000005064	ENSBTAG00000005304
ENSBTAG00000004218	ENSBTAG00000004558	ENSBTAG00000004842	ENSBTAG00000005068	ENSBTAG00000005306
ENSBTAG00000004222	ENSBTAG00000004564	ENSBTAG00000004850	ENSBTAG00000005069	ENSBTAG00000005308
ENSBTAG00000004237	ENSBTAG00000004571	ENSBTAG00000004871	ENSBTAG00000005078	ENSBTAG00000005311
ENSBTAG00000004248	ENSBTAG00000004572	ENSBTAG00000004874	ENSBTAG00000005083	ENSBTAG00000005314
ENSBTAG00000004259	ENSBTAG00000004574	ENSBTAG00000004878	ENSBTAG00000005085	ENSBTAG00000005321
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ENSBTAG00000004355	ENSBTAG00000004720	ENSBTAG00000004930	ENSBTAG00000005168	ENSBTAG00000005426
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ENSBTAG00000004381	ENSBTAG00000004735	ENSBTAG00000004943	ENSBTAG00000005193	ENSBTAG00000005441
ENSBTAG00000004392	ENSBTAG00000004738	ENSBTAG00000004948	ENSBTAG00000005198	ENSBTAG00000005442
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ENSBTAG00000004405	ENSBTAG00000004750	ENSBTAG00000004956	ENSBTAG00000005213	ENSBTAG00000005456
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ENSBTAG00000004428	ENSBTAG00000004770	ENSBTAG00000004976	ENSBTAG00000005231	ENSBTAG00000005475
ENSBTAG00000004456	ENSBTAG00000004775	ENSBTAG00000004977	ENSBTAG00000005234	ENSBTAG00000005477
ENSBTAG00000004458	ENSBTAG00000004776	ENSBTAG00000004979	ENSBTAG00000005238	ENSBTAG00000005479
ENSBTAG00000004460	ENSBTAG00000004777	ENSBTAG00000004982	ENSBTAG00000005243	ENSBTAG00000005488
ENSBTAG00000004461	ENSBTAG00000004796	ENSBTAG00000004994	ENSBTAG00000005247	ENSBTAG00000005496
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ENSBTAG00000004464	ENSBTAG00000004817	ENSBTAG00000005014	ENSBTAG00000005259	ENSBTAG00000005525
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ENSBTAG00000004476	ENSBTAG00000004822	ENSBTAG00000005033	ENSBTAG00000005268	ENSBTAG00000005557
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ENSBTAG00000004498	ENSBTAG00000004824	ENSBTAG00000005041	ENSBTAG00000005278	ENSBTAG00000005592
ENSBTAG00000004507	ENSBTAG00000004832	ENSBTAG00000005042	ENSBTAG00000005286	ENSBTAG00000005603

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ENSBTAG00000005644	ENSBTAG00000005932	ENSBTAG00000006234	ENSBTAG00000006531	ENSBTAG00000006823
ENSBTAG00000005647	ENSBTAG00000005946	ENSBTAG00000006246	ENSBTAG00000006533	ENSBTAG00000006835
ENSBTAG00000005652	ENSBTAG00000005960	ENSBTAG00000006253	ENSBTAG00000006541	ENSBTAG00000006837
ENSBTAG00000005657	ENSBTAG00000005968	ENSBTAG00000006259	ENSBTAG00000006546	ENSBTAG00000006840
ENSBTAG00000005660	ENSBTAG00000005974	ENSBTAG00000006261	ENSBTAG00000006549	ENSBTAG00000006841
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ENSBTAG00000005700	ENSBTAG00000006004	ENSBTAG00000006307	ENSBTAG00000006601	ENSBTAG00000006896
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ENSBTAG00000005719	ENSBTAG00000006033	ENSBTAG00000006349	ENSBTAG00000006626	ENSBTAG00000006921
ENSBTAG00000005722	ENSBTAG00000006035	ENSBTAG00000006352	ENSBTAG00000006635	ENSBTAG00000006925
ENSBTAG00000005725	ENSBTAG00000006036	ENSBTAG00000006354	ENSBTAG00000006639	ENSBTAG00000006937
ENSBTAG00000005728	ENSBTAG00000006037	ENSBTAG00000006360	ENSBTAG00000006642	ENSBTAG00000006947
ENSBTAG00000005729	ENSBTAG00000006039	ENSBTAG00000006385	ENSBTAG00000006655	ENSBTAG00000006951
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ENSBTAG00000043571	ENSBTAG00000044190	ENSBTAG00000045708	ENSBTAG00000046077	ENSBTAG00000046512
ENSBTAG00000043574	ENSBTAG00000044192	ENSBTAG00000045727	ENSBTAG00000046092	ENSBTAG00000046514
ENSBTAG00000043575	ENSBTAG00000044195	ENSBTAG00000045728	ENSBTAG00000046095	ENSBTAG00000046526
ENSBTAG00000043576	ENSBTAG00000044202	ENSBTAG00000045734	ENSBTAG00000046100	ENSBTAG00000046531
ENSBTAG00000043577	ENSBTAG00000044208	ENSBTAG00000045748	ENSBTAG00000046107	ENSBTAG00000046544
ENSBTAG00000043579	ENSBTAG00000044225	ENSBTAG00000045750	ENSBTAG00000046121	ENSBTAG00000046545
ENSBTAG00000043582	ENSBTAG00000044275	ENSBTAG00000045757	ENSBTAG00000046122	ENSBTAG00000046547
ENSBTAG00000043583	ENSBTAG00000044606	ENSBTAG00000045765	ENSBTAG00000046123	ENSBTAG00000046556
ENSBTAG00000043584	ENSBTAG00000044680	ENSBTAG00000045767	ENSBTAG00000046129	ENSBTAG00000046574
ENSBTAG00000043641	ENSBTAG00000044859	ENSBTAG00000045785	ENSBTAG00000046153	ENSBTAG00000046584
ENSBTAG00000043776	ENSBTAG00000044871	ENSBTAG00000045789	ENSBTAG00000046161	ENSBTAG00000046625
ENSBTAG00000043961	ENSBTAG00000044875	ENSBTAG00000045795	ENSBTAG00000046164	ENSBTAG00000046631
ENSBTAG00000043969	ENSBTAG00000045010	ENSBTAG00000045824	ENSBTAG00000046172	ENSBTAG00000046644
ENSBTAG00000043974	ENSBTAG00000045039	ENSBTAG00000045832	ENSBTAG00000046176	ENSBTAG00000046664
ENSBTAG00000043979	ENSBTAG00000045250	ENSBTAG00000045835	ENSBTAG00000046189	ENSBTAG00000046666
ENSBTAG00000043991	ENSBTAG00000045308	ENSBTAG00000045836	ENSBTAG00000046199	ENSBTAG00000046668
ENSBTAG00000043993	ENSBTAG00000045403	ENSBTAG00000045857	ENSBTAG00000046213	ENSBTAG00000046677
ENSBTAG00000043996	ENSBTAG00000045474	ENSBTAG00000045887	ENSBTAG00000046254	ENSBTAG00000046688
ENSBTAG00000044000	ENSBTAG00000045492	ENSBTAG00000045888	ENSBTAG00000046271	ENSBTAG00000046699
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ENSBTAG00000044010	ENSBTAG00000045507	ENSBTAG00000045892	ENSBTAG00000046283	ENSBTAG00000046749
ENSBTAG00000044012	ENSBTAG00000045509	ENSBTAG00000045895	ENSBTAG00000046288	ENSBTAG00000046753
ENSBTAG00000044015	ENSBTAG00000045510	ENSBTAG00000045909	ENSBTAG00000046308	ENSBTAG00000046759
ENSBTAG00000044017	ENSBTAG00000045520	ENSBTAG00000045926	ENSBTAG00000046322	ENSBTAG00000046773
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ENSBTAG00000044035	ENSBTAG00000045538	ENSBTAG00000045934	ENSBTAG00000046325	ENSBTAG00000046786
ENSBTAG00000044044	ENSBTAG00000045544	ENSBTAG00000045943	ENSBTAG00000046332	ENSBTAG00000046788
ENSBTAG00000044046	ENSBTAG00000045566	ENSBTAG00000045954	ENSBTAG00000046333	ENSBTAG00000046812
ENSBTAG00000044048	ENSBTAG00000045567	ENSBTAG00000045965	ENSBTAG00000046335	ENSBTAG00000046813
ENSBTAG00000044059	ENSBTAG00000045568	ENSBTAG00000045967	ENSBTAG00000046338	ENSBTAG00000046817
ENSBTAG00000044065	ENSBTAG00000045574	ENSBTAG00000045970	ENSBTAG00000046341	ENSBTAG00000046819
ENSBTAG00000044066	ENSBTAG00000045585	ENSBTAG00000045976	ENSBTAG00000046345	ENSBTAG00000046837
ENSBTAG00000044071	ENSBTAG00000045592	ENSBTAG00000045981	ENSBTAG00000046346	ENSBTAG00000046838
ENSBTAG00000044080	ENSBTAG00000045593	ENSBTAG00000046000	ENSBTAG00000046350	ENSBTAG00000046848
ENSBTAG00000044083	ENSBTAG00000045602	ENSBTAG00000046004	ENSBTAG00000046353	ENSBTAG00000046854
ENSBTAG00000044111	ENSBTAG00000045604	ENSBTAG00000046014	ENSBTAG00000046357	ENSBTAG00000046865
ENSBTAG00000044113	ENSBTAG00000045608	ENSBTAG00000046017	ENSBTAG00000046363	ENSBTAG00000046879
ENSBTAG00000044123	ENSBTAG00000045619	ENSBTAG00000046019	ENSBTAG00000046376	ENSBTAG00000046886
ENSBTAG00000044126	ENSBTAG00000045648	ENSBTAG00000046024	ENSBTAG00000046426	ENSBTAG00000046905
ENSBTAG00000044132	ENSBTAG00000045650	ENSBTAG00000046033	ENSBTAG00000046432	ENSBTAG00000046918
ENSBTAG00000044155	ENSBTAG00000045674	ENSBTAG00000046034	ENSBTAG00000046444	ENSBTAG00000046941
ENSBTAG00000044158	ENSBTAG00000045677	ENSBTAG00000046035	ENSBTAG00000046467	ENSBTAG00000046981
ENSBTAG00000044169	ENSBTAG00000045685	ENSBTAG00000046046	ENSBTAG00000046470	ENSBTAG00000046984
ENSBTAG00000044173	ENSBTAG00000045699	ENSBTAG00000046049	ENSBTAG00000046476	ENSBTAG00000046988
ENSBTAG00000044175	ENSBTAG00000045701	ENSBTAG00000046058	ENSBTAG00000046484	ENSBTAG00000046993

ENSBTAG00000046996	ENSBTAG00000047231	ENSBTAG00000047461	ENSBTAG00000047717	ENSBTAG00000048027
ENSBTAG00000047009	ENSBTAG00000047238	ENSBTAG00000047482	ENSBTAG00000047722	ENSBTAG00000048033
ENSBTAG00000047022	ENSBTAG00000047262	ENSBTAG00000047488	ENSBTAG00000047752	ENSBTAG00000048048
ENSBTAG00000047027	ENSBTAG00000047268	ENSBTAG00000047490	ENSBTAG00000047764	ENSBTAG00000048049
ENSBTAG00000047029	ENSBTAG00000047280	ENSBTAG00000047491	ENSBTAG00000047766	ENSBTAG00000048071
ENSBTAG00000047039	ENSBTAG00000047282	ENSBTAG00000047499	ENSBTAG00000047768	ENSBTAG00000048075
ENSBTAG00000047048	ENSBTAG00000047286	ENSBTAG00000047502	ENSBTAG00000047787	ENSBTAG00000048098
ENSBTAG00000047051	ENSBTAG00000047299	ENSBTAG00000047510	ENSBTAG00000047794	ENSBTAG00000048102
ENSBTAG00000047053	ENSBTAG00000047303	ENSBTAG00000047520	ENSBTAG00000047837	ENSBTAG00000048112
ENSBTAG00000047062	ENSBTAG00000047314	ENSBTAG00000047524	ENSBTAG00000047855	ENSBTAG00000048118
ENSBTAG00000047072	ENSBTAG00000047316	ENSBTAG00000047543	ENSBTAG00000047869	ENSBTAG00000048135
ENSBTAG00000047098	ENSBTAG00000047320	ENSBTAG00000047545	ENSBTAG00000047881	ENSBTAG00000048143
ENSBTAG00000047113	ENSBTAG00000047326	ENSBTAG00000047547	ENSBTAG00000047883	ENSBTAG00000048152
ENSBTAG00000047116	ENSBTAG00000047330	ENSBTAG00000047561	ENSBTAG00000047896	ENSBTAG00000048154
ENSBTAG00000047121	ENSBTAG00000047332	ENSBTAG00000047572	ENSBTAG00000047902	ENSBTAG00000048155
ENSBTAG00000047129	ENSBTAG00000047347	ENSBTAG00000047580	ENSBTAG00000047907	ENSBTAG00000048156
ENSBTAG00000047136	ENSBTAG00000047354	ENSBTAG00000047600	ENSBTAG00000047911	ENSBTAG00000048158
ENSBTAG00000047138	ENSBTAG00000047357	ENSBTAG00000047609	ENSBTAG00000047914	ENSBTAG00000048169
ENSBTAG00000047142	ENSBTAG00000047361	ENSBTAG00000047621	ENSBTAG00000047919	ENSBTAG00000048172
ENSBTAG00000047148	ENSBTAG00000047363	ENSBTAG00000047635	ENSBTAG00000047946	ENSBTAG00000048173
ENSBTAG00000047155	ENSBTAG00000047365	ENSBTAG00000047649	ENSBTAG00000047957	ENSBTAG00000048225
ENSBTAG00000047164	ENSBTAG00000047367	ENSBTAG00000047654	ENSBTAG00000047966	ENSBTAG00000048249
ENSBTAG00000047165	ENSBTAG00000047374	ENSBTAG00000047659	ENSBTAG00000047975	ENSBTAG00000048264
ENSBTAG00000047174	ENSBTAG00000047375	ENSBTAG00000047664	ENSBTAG00000047986	ENSBTAG00000048274
ENSBTAG00000047181	ENSBTAG00000047377	ENSBTAG00000047670	ENSBTAG00000047990	ENSBTAG00000048290
ENSBTAG00000047191	ENSBTAG00000047383	ENSBTAG00000047690	ENSBTAG00000047992	ENSBTAG00000048309
ENSBTAG00000047199	ENSBTAG00000047395	ENSBTAG00000047697	ENSBTAG00000048008	
ENSBTAG00000047203	ENSBTAG00000047410	ENSBTAG00000047700	ENSBTAG00000048011	
ENSBTAG00000047223	ENSBTAG00000047420	ENSBTAG00000047703	ENSBTAG00000048012	
ENSBTAG00000047227	ENSBTAG00000047432	ENSBTAG00000047708	ENSBTAG00000048022	

APPENDIX A.4

DEGs and Tissue-Specific Genes of Liver



Table A.4. Differentially expressed and tissue-specific (in bold) genes of liver.

ENSBTAG00000000011	ENSBTAG00000000023	ENSBTAG00000000045	ENSBTAG00000000071	ENSBTAG00000000098
ENSBTAG00000000013	ENSBTAG00000000026	ENSBTAG00000000048	ENSBTAG00000000071	ENSBTAG00000000099
ENSBTAG00000000024	ENSBTAG00000000028	ENSBTAG00000000049	ENSBTAG00000000071	ENSBTAG00000000099
ENSBTAG00000000044	ENSBTAG00000000025	ENSBTAG00000000047	ENSBTAG00000000072	ENSBTAG00000000099
ENSBTAG00000000052	ENSBTAG00000000026	ENSBTAG00000000047	ENSBTAG00000000073	ENSBTAG00000000100
ENSBTAG00000000053	ENSBTAG00000000025	ENSBTAG00000000048	ENSBTAG00000000073	ENSBTAG00000000101
ENSBTAG00000000056	ENSBTAG00000000025	ENSBTAG00000000049	ENSBTAG00000000074	ENSBTAG00000000103
ENSBTAG00000000057	ENSBTAG00000000027	ENSBTAG00000000049	ENSBTAG00000000075	ENSBTAG00000000108
ENSBTAG00000000062	ENSBTAG00000000028	ENSBTAG00000000050	ENSBTAG00000000077	ENSBTAG00000000101
ENSBTAG00000000065	ENSBTAG00000000029	ENSBTAG00000000050	ENSBTAG00000000078	ENSBTAG00000000105
ENSBTAG00000000070	ENSBTAG00000000026	ENSBTAG00000000051	ENSBTAG00000000078	ENSBTAG00000000102
ENSBTAG00000000071	ENSBTAG00000000028	ENSBTAG00000000052	ENSBTAG00000000079	ENSBTAG00000000102
ENSBTAG00000000076	ENSBTAG00000000028	ENSBTAG00000000056	ENSBTAG00000000079	ENSBTAG00000000102
ENSBTAG00000000078	ENSBTAG00000000028	ENSBTAG00000000052	ENSBTAG00000000079	ENSBTAG00000000103
ENSBTAG00000000082	ENSBTAG00000000029	ENSBTAG00000000052	ENSBTAG00000000080	ENSBTAG00000000103
ENSBTAG00000000085	ENSBTAG00000000029	ENSBTAG00000000053	ENSBTAG00000000082	ENSBTAG00000000104
ENSBTAG00000000097	ENSBTAG00000000029	ENSBTAG00000000055	ENSBTAG00000000083	ENSBTAG00000000104
ENSBTAG00000000099	ENSBTAG00000000029	ENSBTAG00000000056	ENSBTAG00000000082	ENSBTAG00000000105
ENSBTAG00000000103	ENSBTAG00000000030	ENSBTAG00000000056	ENSBTAG00000000083	ENSBTAG00000000105
ENSBTAG00000000106	ENSBTAG00000000030	ENSBTAG00000000057	ENSBTAG00000000083	ENSBTAG00000000106
ENSBTAG00000000109	ENSBTAG00000000030	ENSBTAG00000000058	ENSBTAG00000000084	ENSBTAG00000000106
ENSBTAG00000000120	ENSBTAG00000000031	ENSBTAG00000000058	ENSBTAG00000000084	ENSBTAG00000000107
ENSBTAG00000000123	ENSBTAG00000000031	ENSBTAG00000000058	ENSBTAG00000000085	ENSBTAG00000000107
ENSBTAG00000000128	ENSBTAG00000000032	ENSBTAG00000000058	ENSBTAG00000000085	ENSBTAG00000000107
ENSBTAG00000000140	ENSBTAG00000000032	ENSBTAG00000000059	ENSBTAG00000000086	ENSBTAG00000000108
ENSBTAG00000000146	ENSBTAG00000000033	ENSBTAG00000000059	ENSBTAG00000000087	ENSBTAG00000000109
ENSBTAG00000000147	ENSBTAG00000000034	ENSBTAG00000000059	ENSBTAG00000000089	ENSBTAG00000000109
ENSBTAG00000000149	ENSBTAG00000000034	ENSBTAG00000000060	ENSBTAG00000000089	ENSBTAG00000000109
ENSBTAG00000000156	ENSBTAG00000000038	ENSBTAG00000000061	ENSBTAG00000000090	ENSBTAG00000000109
ENSBTAG00000000157	ENSBTAG00000000039	ENSBTAG00000000062	ENSBTAG00000000090	ENSBTAG00000000110
ENSBTAG00000000160	ENSBTAG00000000039	ENSBTAG00000000062	ENSBTAG00000000090	ENSBTAG00000000110
ENSBTAG00000000170	ENSBTAG00000000039	ENSBTAG00000000063	ENSBTAG00000000091	ENSBTAG00000000110
ENSBTAG00000000175	ENSBTAG00000000039	ENSBTAG00000000064	ENSBTAG00000000092	ENSBTAG00000000112
ENSBTAG00000000182	ENSBTAG00000000039	ENSBTAG00000000064	ENSBTAG00000000092	ENSBTAG00000000119
ENSBTAG00000000188	ENSBTAG00000000040	ENSBTAG00000000065	ENSBTAG00000000093	ENSBTAG00000000120
ENSBTAG00000000189	ENSBTAG00000000041	ENSBTAG00000000065	ENSBTAG00000000094	ENSBTAG00000000123
ENSBTAG00000000191	ENSBTAG00000000043	ENSBTAG00000000066	ENSBTAG00000000094	ENSBTAG00000000133
ENSBTAG00000000197	ENSBTAG00000000043	ENSBTAG00000000067	ENSBTAG00000000094	ENSBTAG00000000139
ENSBTAG00000000199	ENSBTAG00000000044	ENSBTAG00000000068	ENSBTAG00000000095	ENSBTAG00000000140
ENSBTAG00000000205	ENSBTAG00000000044	ENSBTAG00000000069	ENSBTAG00000000096	ENSBTAG00000000142
ENSBTAG00000000210	ENSBTAG00000000045	ENSBTAG00000000070	ENSBTAG00000000096	ENSBTAG00000000146
ENSBTAG00000000212	ENSBTAG00000000046	ENSBTAG00000000070	ENSBTAG00000000097	ENSBTAG00000000151
ENSBTAG00000000229	ENSBTAG00000000048	ENSBTAG00000000070	ENSBTAG00000000098	ENSBTAG00000000156
ENSBTAG00000000232	ENSBTAG00000000045	ENSBTAG00000000071	ENSBTAG00000000098	ENSBTAG00000000163

ENSBTAG00000001164	ENSBTAG00000001446	ENSBTAG00000001706	ENSBTAG00000001911	ENSBTAG00000002178
ENSBTAG00000001173	ENSBTAG00000001447	ENSBTAG00000001708	ENSBTAG00000001915	ENSBTAG00000002184
ENSBTAG00000001176	ENSBTAG00000001448	ENSBTAG00000001710	ENSBTAG00000001917	ENSBTAG00000002186
ENSBTAG00000001181	ENSBTAG00000001455	ENSBTAG00000001721	ENSBTAG00000001931	ENSBTAG00000002188
ENSBTAG00000001182	ENSBTAG00000001462	ENSBTAG00000001724	ENSBTAG00000001936	ENSBTAG00000002192
ENSBTAG00000001183	ENSBTAG00000001464	ENSBTAG00000001728	ENSBTAG00000001941	ENSBTAG00000002196
ENSBTAG00000001187	ENSBTAG00000001474	ENSBTAG00000001729	ENSBTAG00000001942	ENSBTAG00000002204
ENSBTAG00000001188	ENSBTAG00000001478	ENSBTAG00000001735	ENSBTAG00000001952	ENSBTAG00000002206
ENSBTAG00000001199	ENSBTAG00000001485	ENSBTAG00000001739	ENSBTAG00000001961	ENSBTAG00000002211
ENSBTAG00000001225	ENSBTAG00000001488	ENSBTAG00000001740	ENSBTAG00000001966	ENSBTAG00000002214
ENSBTAG00000001231	ENSBTAG00000001489	ENSBTAG00000001741	ENSBTAG00000001981	ENSBTAG00000002215
ENSBTAG00000001243	ENSBTAG00000001503	ENSBTAG00000001745	ENSBTAG00000001992	ENSBTAG00000002216
ENSBTAG00000001244	ENSBTAG00000001510	ENSBTAG00000001747	ENSBTAG00000002008	ENSBTAG00000002219
ENSBTAG00000001247	ENSBTAG00000001517	ENSBTAG00000001748	ENSBTAG00000002014	ENSBTAG00000002232
ENSBTAG00000001249	ENSBTAG00000001521	ENSBTAG00000001753	ENSBTAG00000002021	ENSBTAG00000002233
ENSBTAG00000001257	ENSBTAG00000001533	ENSBTAG00000001754	ENSBTAG00000002023	ENSBTAG00000002242
ENSBTAG00000001265	ENSBTAG00000001535	ENSBTAG00000001770	ENSBTAG00000002024	ENSBTAG00000002247
ENSBTAG00000001271	ENSBTAG00000001537	ENSBTAG00000001785	ENSBTAG00000002025	ENSBTAG00000002253
ENSBTAG00000001279	ENSBTAG00000001543	ENSBTAG00000001786	ENSBTAG00000002027	ENSBTAG00000002258
ENSBTAG00000001282	ENSBTAG00000001545	ENSBTAG00000001788	ENSBTAG00000002029	ENSBTAG00000002261
ENSBTAG00000001288	ENSBTAG00000001564	ENSBTAG00000001790	ENSBTAG00000002030	ENSBTAG00000002271
ENSBTAG00000001293	ENSBTAG00000001575	ENSBTAG00000001803	ENSBTAG00000002036	ENSBTAG00000002278
ENSBTAG00000001294	ENSBTAG00000001580	ENSBTAG00000001808	ENSBTAG00000002044	ENSBTAG00000002281
ENSBTAG00000001298	ENSBTAG00000001582	ENSBTAG00000001816	ENSBTAG00000002046	ENSBTAG00000002283
ENSBTAG00000001299	ENSBTAG00000001592	ENSBTAG00000001823	ENSBTAG00000002056	ENSBTAG00000002286
ENSBTAG00000001324	ENSBTAG00000001595	ENSBTAG00000001824	ENSBTAG00000002062	ENSBTAG00000002290
ENSBTAG00000001325	ENSBTAG00000001597	ENSBTAG00000001828	ENSBTAG00000002065	ENSBTAG00000002296
ENSBTAG00000001329	ENSBTAG00000001601	ENSBTAG00000001829	ENSBTAG00000002075	ENSBTAG00000002297
ENSBTAG00000001333	ENSBTAG00000001603	ENSBTAG00000001830	ENSBTAG00000002076	ENSBTAG00000002298
ENSBTAG00000001344	ENSBTAG00000001605	ENSBTAG00000001835	ENSBTAG00000002078	ENSBTAG00000002299
ENSBTAG00000001348	ENSBTAG00000001607	ENSBTAG00000001838	ENSBTAG00000002080	ENSBTAG00000002302
ENSBTAG00000001350	ENSBTAG00000001615	ENSBTAG00000001839	ENSBTAG00000002081	ENSBTAG00000002305
ENSBTAG00000001354	ENSBTAG00000001618	ENSBTAG00000001844	ENSBTAG00000002082	ENSBTAG00000002309
ENSBTAG00000001367	ENSBTAG00000001632	ENSBTAG00000001851	ENSBTAG00000002083	ENSBTAG00000002311
ENSBTAG00000001368	ENSBTAG00000001640	ENSBTAG00000001852	ENSBTAG00000002092	ENSBTAG00000002315
ENSBTAG00000001374	ENSBTAG00000001652	ENSBTAG00000001864	ENSBTAG00000002096	ENSBTAG00000002316
ENSBTAG00000001385	ENSBTAG00000001656	ENSBTAG00000001865	ENSBTAG00000002101	ENSBTAG00000002317
ENSBTAG00000001388	ENSBTAG00000001658	ENSBTAG00000001867	ENSBTAG00000002103	ENSBTAG00000002319
ENSBTAG00000001390	ENSBTAG00000001675	ENSBTAG00000001868	ENSBTAG00000002104	ENSBTAG00000002323
ENSBTAG00000001392	ENSBTAG00000001683	ENSBTAG00000001877	ENSBTAG00000002107	ENSBTAG00000002326
ENSBTAG00000001398	ENSBTAG00000001687	ENSBTAG00000001881	ENSBTAG00000002110	ENSBTAG00000002327
ENSBTAG00000001401	ENSBTAG00000001692	ENSBTAG00000001885	ENSBTAG00000002115	ENSBTAG00000002332
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ENSBTAG00000001440	ENSBTAG00000001702	ENSBTAG00000001898	ENSBTAG00000002129	ENSBTAG00000002349
ENSBTAG00000001443	ENSBTAG00000001703	ENSBTAG00000001904	ENSBTAG00000002170	ENSBTAG00000002361

ENSBTAG00000002362	ENSBTAG00000002650	ENSBTAG00000002910	ENSBTAG00000003164	ENSBTAG00000003414
ENSBTAG00000002367	ENSBTAG00000002651	ENSBTAG00000002915	ENSBTAG00000003165	ENSBTAG00000003418
ENSBTAG00000002369	ENSBTAG00000002661	ENSBTAG00000002917	ENSBTAG00000003169	ENSBTAG00000003432
ENSBTAG00000002390	ENSBTAG00000002668	ENSBTAG00000002919	ENSBTAG00000003176	ENSBTAG00000003434
ENSBTAG00000002391	ENSBTAG00000002680	ENSBTAG00000002921	ENSBTAG00000003183	ENSBTAG00000003455
ENSBTAG00000002392	ENSBTAG00000002683	ENSBTAG00000002922	ENSBTAG00000003196	ENSBTAG00000003457
ENSBTAG00000002393	ENSBTAG00000002687	ENSBTAG00000002924	ENSBTAG00000003200	ENSBTAG00000003458
ENSBTAG00000002394	ENSBTAG00000002689	ENSBTAG00000002931	ENSBTAG00000003207	ENSBTAG00000003474
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ENSBTAG00000002425	ENSBTAG00000002706	ENSBTAG00000002942	ENSBTAG00000003220	ENSBTAG00000003505
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ENSBTAG00000002430	ENSBTAG00000002714	ENSBTAG00000002951	ENSBTAG00000003236	ENSBTAG00000003508
ENSBTAG00000002440	ENSBTAG00000002715	ENSBTAG00000002960	ENSBTAG00000003238	ENSBTAG00000003512
ENSBTAG00000002451	ENSBTAG00000002728	ENSBTAG00000002963	ENSBTAG00000003239	ENSBTAG00000003515
ENSBTAG00000002454	ENSBTAG00000002738	ENSBTAG00000002964	ENSBTAG00000003245	ENSBTAG00000003516
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ENSBTAG00000002463	ENSBTAG00000002742	ENSBTAG00000002972	ENSBTAG00000003275	ENSBTAG00000003523
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ENSBTAG00000002473	ENSBTAG00000002749	ENSBTAG00000002978	ENSBTAG00000003282	ENSBTAG00000003527
ENSBTAG00000002474	ENSBTAG00000002756	ENSBTAG00000002979	ENSBTAG00000003291	ENSBTAG00000003529
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ENSBTAG00000002554	ENSBTAG00000002799	ENSBTAG00000003027	ENSBTAG00000003319	ENSBTAG00000003574
ENSBTAG00000002559	ENSBTAG00000002803	ENSBTAG00000003034	ENSBTAG00000003322	ENSBTAG00000003581
ENSBTAG00000002561	ENSBTAG00000002813	ENSBTAG00000003036	ENSBTAG00000003328	ENSBTAG00000003586
ENSBTAG00000002562	ENSBTAG00000002820	ENSBTAG00000003040	ENSBTAG00000003334	ENSBTAG00000003595
ENSBTAG00000002564	ENSBTAG00000002821	ENSBTAG00000003043	ENSBTAG00000003353	ENSBTAG00000003602
ENSBTAG00000002566	ENSBTAG00000002827	ENSBTAG00000003047	ENSBTAG00000003358	ENSBTAG00000003604
ENSBTAG00000002574	ENSBTAG00000002843	ENSBTAG00000003054	ENSBTAG00000003359	ENSBTAG00000003606
ENSBTAG00000002578	ENSBTAG00000002847	ENSBTAG00000003068	ENSBTAG00000003362	ENSBTAG00000003607
ENSBTAG00000002585	ENSBTAG00000002853	ENSBTAG00000003072	ENSBTAG00000003369	ENSBTAG00000003608
ENSBTAG00000002586	ENSBTAG00000002854	ENSBTAG00000003076	ENSBTAG00000003383	ENSBTAG00000003619
ENSBTAG00000002593	ENSBTAG00000002858	ENSBTAG00000003101	ENSBTAG00000003384	ENSBTAG00000003624
ENSBTAG00000002605	ENSBTAG00000002859	ENSBTAG00000003113	ENSBTAG00000003388	ENSBTAG00000003633
ENSBTAG00000002610	ENSBTAG00000002863	ENSBTAG00000003115	ENSBTAG00000003393	ENSBTAG00000003642
ENSBTAG00000002616	ENSBTAG00000002878	ENSBTAG00000003130	ENSBTAG00000003396	ENSBTAG00000003650
ENSBTAG00000002626	ENSBTAG00000002898	ENSBTAG00000003137	ENSBTAG00000003397	ENSBTAG00000003658
ENSBTAG00000002642	ENSBTAG00000002900	ENSBTAG00000003151	ENSBTAG00000003398	ENSBTAG00000003667
ENSBTAG00000002644	ENSBTAG00000002908	ENSBTAG00000003162	ENSBTAG00000003403	ENSBTAG00000003669

ENSBTAG00000003675	ENSBTAG00000003901	ENSBTAG00000004079	ENSBTAG00000004310	ENSBTAG00000004549
ENSBTAG00000003676	ENSBTAG00000003908	ENSBTAG00000004081	ENSBTAG00000004315	ENSBTAG00000004554
ENSBTAG00000003682	ENSBTAG00000003915	ENSBTAG00000004094	ENSBTAG00000004321	ENSBTAG00000004556
ENSBTAG00000003684	ENSBTAG00000003919	ENSBTAG00000004097	ENSBTAG00000004322	ENSBTAG00000004561
ENSBTAG00000003691	ENSBTAG00000003920	ENSBTAG00000004099	ENSBTAG00000004328	ENSBTAG00000004570
ENSBTAG00000003701	ENSBTAG00000003921	ENSBTAG00000004112	ENSBTAG00000004329	ENSBTAG00000004574
ENSBTAG00000003705	ENSBTAG00000003923	ENSBTAG00000004115	ENSBTAG00000004330	ENSBTAG00000004582
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ENSBTAG00000003712	ENSBTAG00000003938	ENSBTAG00000004124	ENSBTAG00000004343	ENSBTAG00000004591
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ENSBTAG00000003721	ENSBTAG00000003946	ENSBTAG00000004131	ENSBTAG00000004356	ENSBTAG00000004593
ENSBTAG00000003727	ENSBTAG00000003948	ENSBTAG00000004145	ENSBTAG00000004358	ENSBTAG00000004601
ENSBTAG00000003733	ENSBTAG00000003950	ENSBTAG00000004150	ENSBTAG00000004362	ENSBTAG00000004608
ENSBTAG00000003737	ENSBTAG00000003952	ENSBTAG00000004155	ENSBTAG00000004364	ENSBTAG00000004612
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ENSBTAG00000046746	ENSBTAG00000047155	ENSBTAG00000047520	ENSBTAG00000047930	ENSBTAG00000048286
ENSBTAG00000046752	ENSBTAG00000047161	ENSBTAG00000047543	ENSBTAG00000047955	ENSBTAG00000048287
ENSBTAG00000046768	ENSBTAG00000047164	ENSBTAG00000047560	ENSBTAG00000047957	ENSBTAG00000048296
ENSBTAG00000046769	ENSBTAG00000047166	ENSBTAG00000047567	ENSBTAG00000047966	ENSBTAG00000048304
ENSBTAG00000046775	ENSBTAG00000047174	ENSBTAG00000047582	ENSBTAG00000047970	
ENSBTAG00000046788	ENSBTAG00000047191	ENSBTAG00000047586	ENSBTAG00000047975	

APPENDIX A.5

DEGs and Tissue-Specific Genes of Muscle



Table A.5. Differentially expressed and tissue-specific (in bold) genes of muscle.

ENSBTAG00000000005	ENSBTAG00000000204	ENSBTAG00000000434	ENSBTAG00000000695	ENSBTAG00000000937
ENSBTAG00000000011	ENSBTAG00000000212	ENSBTAG00000000436	ENSBTAG00000000698	ENSBTAG00000000942
ENSBTAG00000000012	ENSBTAG00000000213	ENSBTAG00000000437	ENSBTAG00000000704	ENSBTAG00000000950
ENSBTAG00000000013	ENSBTAG00000000215	ENSBTAG00000000440	ENSBTAG00000000705	ENSBTAG00000000951
ENSBTAG00000000020	ENSBTAG00000000220	ENSBTAG00000000442	ENSBTAG00000000711	ENSBTAG00000000957
ENSBTAG00000000024	ENSBTAG00000000223	ENSBTAG00000000445	ENSBTAG00000000717	ENSBTAG00000000961
ENSBTAG00000000031	ENSBTAG00000000224	ENSBTAG00000000451	ENSBTAG00000000731	ENSBTAG00000000962
ENSBTAG00000000033	ENSBTAG00000000225	ENSBTAG00000000462	ENSBTAG00000000735	ENSBTAG00000000967
ENSBTAG00000000039	ENSBTAG00000000232	ENSBTAG00000000473	ENSBTAG00000000737	ENSBTAG00000000970
ENSBTAG00000000040	ENSBTAG00000000233	ENSBTAG00000000478	ENSBTAG00000000738	ENSBTAG00000000973
ENSBTAG00000000042	ENSBTAG00000000236	ENSBTAG00000000484	ENSBTAG00000000755	ENSBTAG00000000979
ENSBTAG00000000044	ENSBTAG00000000238	ENSBTAG00000000492	ENSBTAG00000000758	ENSBTAG00000000985
ENSBTAG00000000052	ENSBTAG00000000244	ENSBTAG00000000494	ENSBTAG00000000782	ENSBTAG00000000993
ENSBTAG00000000053	ENSBTAG00000000245	ENSBTAG00000000495	ENSBTAG00000000791	ENSBTAG00000000995
ENSBTAG00000000057	ENSBTAG00000000253	ENSBTAG00000000511	ENSBTAG00000000793	ENSBTAG00000001003
ENSBTAG00000000061	ENSBTAG00000000271	ENSBTAG00000000512	ENSBTAG00000000799	ENSBTAG00000001007
ENSBTAG00000000067	ENSBTAG00000000277	ENSBTAG00000000517	ENSBTAG00000000801	ENSBTAG00000001010
ENSBTAG00000000072	ENSBTAG00000000283	ENSBTAG00000000524	ENSBTAG00000000802	ENSBTAG00000001014
ENSBTAG00000000077	ENSBTAG00000000286	ENSBTAG00000000527	ENSBTAG00000000807	ENSBTAG00000001019
ENSBTAG00000000078	ENSBTAG00000000289	ENSBTAG00000000546	ENSBTAG00000000809	ENSBTAG00000001027
ENSBTAG00000000087	ENSBTAG00000000296	ENSBTAG00000000548	ENSBTAG00000000812	ENSBTAG00000001032
ENSBTAG00000000090	ENSBTAG00000000306	ENSBTAG00000000550	ENSBTAG00000000816	ENSBTAG00000001049
ENSBTAG00000000092	ENSBTAG00000000312	ENSBTAG00000000551	ENSBTAG00000000820	ENSBTAG00000001057
ENSBTAG00000000094	ENSBTAG00000000313	ENSBTAG00000000555	ENSBTAG00000000829	ENSBTAG00000001058
ENSBTAG00000000095	ENSBTAG00000000315	ENSBTAG00000000559	ENSBTAG00000000830	ENSBTAG00000001059
ENSBTAG00000000099	ENSBTAG00000000317	ENSBTAG00000000563	ENSBTAG00000000831	ENSBTAG00000001060
ENSBTAG00000000102	ENSBTAG00000000320	ENSBTAG00000000570	ENSBTAG00000000833	ENSBTAG00000001068
ENSBTAG00000000105	ENSBTAG00000000328	ENSBTAG00000000582	ENSBTAG00000000835	ENSBTAG00000001078
ENSBTAG00000000106	ENSBTAG00000000332	ENSBTAG00000000585	ENSBTAG00000000838	ENSBTAG00000001081
ENSBTAG00000000111	ENSBTAG00000000341	ENSBTAG00000000586	ENSBTAG00000000842	ENSBTAG00000001083
ENSBTAG00000000130	ENSBTAG00000000342	ENSBTAG00000000590	ENSBTAG00000000843	ENSBTAG00000001085
ENSBTAG00000000132	ENSBTAG00000000345	ENSBTAG00000000604	ENSBTAG00000000851	ENSBTAG00000001086
ENSBTAG00000000133	ENSBTAG00000000359	ENSBTAG00000000607	ENSBTAG00000000853	ENSBTAG00000001092
ENSBTAG00000000134	ENSBTAG00000000371	ENSBTAG00000000608	ENSBTAG00000000855	ENSBTAG00000001093
ENSBTAG00000000139	ENSBTAG00000000372	ENSBTAG00000000621	ENSBTAG00000000873	ENSBTAG00000001096
ENSBTAG00000000140	ENSBTAG00000000376	ENSBTAG00000000623	ENSBTAG00000000878	ENSBTAG00000001097
ENSBTAG00000000141	ENSBTAG00000000385	ENSBTAG00000000644	ENSBTAG00000000892	ENSBTAG00000001104
ENSBTAG00000000156	ENSBTAG00000000390	ENSBTAG00000000648	ENSBTAG00000000894	ENSBTAG00000001105
ENSBTAG00000000160	ENSBTAG00000000392	ENSBTAG00000000656	ENSBTAG00000000897	ENSBTAG00000001108
ENSBTAG00000000162	ENSBTAG00000000393	ENSBTAG00000000664	ENSBTAG00000000899	ENSBTAG00000001110
ENSBTAG00000000170	ENSBTAG00000000394	ENSBTAG00000000672	ENSBTAG00000000900	ENSBTAG00000001112
ENSBTAG00000000184	ENSBTAG00000000395	ENSBTAG00000000678	ENSBTAG00000000910	ENSBTAG00000001120
ENSBTAG00000000185	ENSBTAG00000000405	ENSBTAG00000000679	ENSBTAG00000000917	ENSBTAG00000001123
ENSBTAG00000000189	ENSBTAG00000000418	ENSBTAG00000000693	ENSBTAG00000000928	ENSBTAG00000001131

ENSBTAG00000001137	ENSBTAG00000001396	ENSBTAG00000001604	ENSBTAG00000001872	ENSBTAG00000002116
ENSBTAG00000001138	ENSBTAG00000001398	ENSBTAG00000001607	ENSBTAG00000001874	ENSBTAG00000002121
ENSBTAG00000001141	ENSBTAG00000001401	ENSBTAG00000001609	ENSBTAG00000001889	ENSBTAG00000002137
ENSBTAG00000001143	ENSBTAG00000001408	ENSBTAG00000001616	ENSBTAG00000001894	ENSBTAG00000002151
ENSBTAG00000001144	ENSBTAG00000001414	ENSBTAG00000001618	ENSBTAG00000001904	ENSBTAG00000002157
ENSBTAG00000001146	ENSBTAG00000001417	ENSBTAG00000001626	ENSBTAG00000001908	ENSBTAG00000002179
ENSBTAG00000001154	ENSBTAG00000001419	ENSBTAG00000001629	ENSBTAG00000001911	ENSBTAG00000002182
ENSBTAG00000001160	ENSBTAG00000001420	ENSBTAG00000001649	ENSBTAG00000001926	ENSBTAG00000002187
ENSBTAG00000001161	ENSBTAG00000001440	ENSBTAG00000001656	ENSBTAG00000001928	ENSBTAG00000002190
ENSBTAG00000001163	ENSBTAG00000001441	ENSBTAG00000001671	ENSBTAG00000001932	ENSBTAG00000002191
ENSBTAG00000001183	ENSBTAG00000001443	ENSBTAG00000001675	ENSBTAG00000001936	ENSBTAG00000002196
ENSBTAG00000001188	ENSBTAG00000001446	ENSBTAG00000001694	ENSBTAG00000001938	ENSBTAG00000002203
ENSBTAG00000001192	ENSBTAG00000001447	ENSBTAG00000001706	ENSBTAG00000001939	ENSBTAG00000002209
ENSBTAG00000001193	ENSBTAG00000001449	ENSBTAG00000001707	ENSBTAG00000001941	ENSBTAG00000002215
ENSBTAG00000001195	ENSBTAG00000001455	ENSBTAG00000001708	ENSBTAG00000001942	ENSBTAG00000002216
ENSBTAG00000001197	ENSBTAG00000001464	ENSBTAG00000001710	ENSBTAG00000001952	ENSBTAG00000002220
ENSBTAG00000001207	ENSBTAG00000001465	ENSBTAG00000001712	ENSBTAG00000001956	ENSBTAG00000002223
ENSBTAG00000001212	ENSBTAG00000001468	ENSBTAG00000001717	ENSBTAG00000001957	ENSBTAG00000002226
ENSBTAG00000001224	ENSBTAG00000001478	ENSBTAG00000001721	ENSBTAG00000001977	ENSBTAG00000002232
ENSBTAG00000001229	ENSBTAG00000001481	ENSBTAG00000001735	ENSBTAG00000001979	ENSBTAG00000002240
ENSBTAG00000001233	ENSBTAG00000001483	ENSBTAG00000001739	ENSBTAG00000001987	ENSBTAG00000002258
ENSBTAG00000001242	ENSBTAG00000001497	ENSBTAG00000001740	ENSBTAG00000001992	ENSBTAG00000002261
ENSBTAG00000001244	ENSBTAG00000001503	ENSBTAG00000001741	ENSBTAG00000002000	ENSBTAG00000002266
ENSBTAG00000001249	ENSBTAG00000001506	ENSBTAG00000001745	ENSBTAG00000002018	ENSBTAG00000002271
ENSBTAG00000001258	ENSBTAG00000001511	ENSBTAG00000001748	ENSBTAG00000002023	ENSBTAG00000002272
ENSBTAG00000001269	ENSBTAG00000001512	ENSBTAG00000001752	ENSBTAG00000002024	ENSBTAG00000002280
ENSBTAG00000001273	ENSBTAG00000001514	ENSBTAG00000001754	ENSBTAG00000002027	ENSBTAG00000002282
ENSBTAG00000001274	ENSBTAG00000001517	ENSBTAG00000001771	ENSBTAG00000002030	ENSBTAG00000002283
ENSBTAG00000001296	ENSBTAG00000001533	ENSBTAG00000001773	ENSBTAG00000002033	ENSBTAG00000002293
ENSBTAG00000001298	ENSBTAG00000001537	ENSBTAG00000001774	ENSBTAG00000002036	ENSBTAG00000002296
ENSBTAG00000001302	ENSBTAG00000001546	ENSBTAG00000001785	ENSBTAG00000002038	ENSBTAG00000002299
ENSBTAG00000001303	ENSBTAG00000001552	ENSBTAG00000001806	ENSBTAG00000002039	ENSBTAG00000002306
ENSBTAG00000001306	ENSBTAG00000001564	ENSBTAG00000001817	ENSBTAG00000002041	ENSBTAG00000002309
ENSBTAG00000001314	ENSBTAG00000001565	ENSBTAG00000001824	ENSBTAG00000002051	ENSBTAG00000002315
ENSBTAG00000001328	ENSBTAG00000001567	ENSBTAG00000001829	ENSBTAG00000002059	ENSBTAG00000002317
ENSBTAG00000001333	ENSBTAG00000001576	ENSBTAG00000001835	ENSBTAG00000002062	ENSBTAG00000002323
ENSBTAG00000001344	ENSBTAG00000001578	ENSBTAG00000001836	ENSBTAG00000002068	ENSBTAG00000002326
ENSBTAG00000001349	ENSBTAG00000001579	ENSBTAG00000001839	ENSBTAG00000002076	ENSBTAG00000002331
ENSBTAG00000001356	ENSBTAG00000001580	ENSBTAG00000001842	ENSBTAG00000002082	ENSBTAG00000002333
ENSBTAG00000001361	ENSBTAG00000001585	ENSBTAG00000001844	ENSBTAG00000002094	ENSBTAG00000002344
ENSBTAG00000001365	ENSBTAG00000001586	ENSBTAG00000001855	ENSBTAG00000002096	ENSBTAG00000002356
ENSBTAG00000001368	ENSBTAG00000001592	ENSBTAG00000001856	ENSBTAG00000002097	ENSBTAG00000002362
ENSBTAG00000001374	ENSBTAG00000001595	ENSBTAG00000001858	ENSBTAG00000002098	ENSBTAG00000002363
ENSBTAG00000001388	ENSBTAG00000001598	ENSBTAG00000001862	ENSBTAG00000002107	ENSBTAG00000002367
ENSBTAG00000001390	ENSBTAG00000001601	ENSBTAG00000001865	ENSBTAG00000002108	ENSBTAG00000002390
ENSBTAG00000001394	ENSBTAG00000001603	ENSBTAG00000001868	ENSBTAG00000002112	ENSBTAG00000002408

ENSBTAG00000002411	ENSBTAG00000002651	ENSBTAG00000002953	ENSBTAG00000003222	ENSBTAG00000003490
ENSBTAG00000002412	ENSBTAG00000002654	ENSBTAG00000002959	ENSBTAG00000003242	ENSBTAG00000003491
ENSBTAG00000002413	ENSBTAG00000002657	ENSBTAG00000002962	ENSBTAG00000003256	ENSBTAG00000003495
ENSBTAG00000002414	ENSBTAG00000002663	ENSBTAG00000002964	ENSBTAG00000003261	ENSBTAG00000003496
ENSBTAG00000002417	ENSBTAG00000002669	ENSBTAG00000002971	ENSBTAG00000003263	ENSBTAG00000003498
ENSBTAG00000002418	ENSBTAG00000002683	ENSBTAG00000002983	ENSBTAG00000003265	ENSBTAG00000003501
ENSBTAG00000002423	ENSBTAG00000002690	ENSBTAG00000002993	ENSBTAG00000003275	ENSBTAG00000003503
ENSBTAG00000002425	ENSBTAG00000002697	ENSBTAG00000002997	ENSBTAG00000003278	ENSBTAG00000003504
ENSBTAG00000002427	ENSBTAG00000002698	ENSBTAG00000002999	ENSBTAG00000003279	ENSBTAG00000003505
ENSBTAG00000002430	ENSBTAG00000002699	ENSBTAG00000003014	ENSBTAG00000003280	ENSBTAG00000003506
ENSBTAG00000002435	ENSBTAG00000002703	ENSBTAG00000003015	ENSBTAG00000003282	ENSBTAG00000003508
ENSBTAG00000002440	ENSBTAG00000002706	ENSBTAG00000003043	ENSBTAG00000003290	ENSBTAG00000003511
ENSBTAG00000002452	ENSBTAG00000002708	ENSBTAG00000003044	ENSBTAG00000003291	ENSBTAG00000003512
ENSBTAG00000002457	ENSBTAG00000002714	ENSBTAG00000003045	ENSBTAG00000003296	ENSBTAG00000003515
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ENSBTAG00000002467	ENSBTAG00000002728	ENSBTAG00000003068	ENSBTAG00000003301	ENSBTAG00000003526
ENSBTAG00000002471	ENSBTAG00000002733	ENSBTAG00000003069	ENSBTAG00000003305	ENSBTAG00000003531
ENSBTAG00000002472	ENSBTAG00000002737	ENSBTAG00000003072	ENSBTAG00000003307	ENSBTAG00000003535
ENSBTAG00000002479	ENSBTAG00000002746	ENSBTAG00000003074	ENSBTAG00000003314	ENSBTAG00000003539
ENSBTAG00000002487	ENSBTAG00000002748	ENSBTAG00000003076	ENSBTAG00000003319	ENSBTAG00000003543
ENSBTAG00000002495	ENSBTAG00000002770	ENSBTAG00000003081	ENSBTAG00000003329	ENSBTAG00000003560
ENSBTAG00000002497	ENSBTAG00000002784	ENSBTAG00000003083	ENSBTAG00000003330	ENSBTAG00000003567
ENSBTAG00000002507	ENSBTAG00000002786	ENSBTAG00000003089	ENSBTAG00000003332	ENSBTAG00000003568
ENSBTAG00000002512	ENSBTAG00000002813	ENSBTAG00000003098	ENSBTAG00000003341	ENSBTAG00000003579
ENSBTAG00000002520	ENSBTAG00000002823	ENSBTAG00000003109	ENSBTAG00000003349	ENSBTAG00000003581
ENSBTAG00000002525	ENSBTAG00000002827	ENSBTAG00000003113	ENSBTAG00000003359	ENSBTAG00000003598
ENSBTAG00000002528	ENSBTAG00000002836	ENSBTAG00000003115	ENSBTAG00000003362	ENSBTAG00000003601
ENSBTAG00000002549	ENSBTAG00000002845	ENSBTAG00000003124	ENSBTAG00000003376	ENSBTAG00000003609
ENSBTAG00000002555	ENSBTAG00000002853	ENSBTAG00000003143	ENSBTAG00000003388	ENSBTAG00000003610
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ENSBTAG00000002576	ENSBTAG00000002885	ENSBTAG00000003166	ENSBTAG00000003395	ENSBTAG00000003632
ENSBTAG00000002585	ENSBTAG00000002896	ENSBTAG00000003171	ENSBTAG00000003409	ENSBTAG00000003636
ENSBTAG00000002591	ENSBTAG00000002898	ENSBTAG00000003172	ENSBTAG00000003410	ENSBTAG00000003658
ENSBTAG00000002593	ENSBTAG00000002900	ENSBTAG00000003178	ENSBTAG00000003415	ENSBTAG00000003661
ENSBTAG00000002596	ENSBTAG00000002908	ENSBTAG00000003180	ENSBTAG00000003424	ENSBTAG00000003667
ENSBTAG00000002608	ENSBTAG00000002918	ENSBTAG00000003185	ENSBTAG00000003434	ENSBTAG00000003671
ENSBTAG00000002610	ENSBTAG00000002921	ENSBTAG00000003189	ENSBTAG00000003438	ENSBTAG00000003682
ENSBTAG00000002616	ENSBTAG00000002922	ENSBTAG00000003196	ENSBTAG00000003443	ENSBTAG00000003687
ENSBTAG00000002623	ENSBTAG00000002923	ENSBTAG00000003200	ENSBTAG00000003450	ENSBTAG00000003690
ENSBTAG00000002624	ENSBTAG00000002924	ENSBTAG00000003209	ENSBTAG00000003454	ENSBTAG00000003691
ENSBTAG00000002631	ENSBTAG00000002929	ENSBTAG00000003212	ENSBTAG00000003457	ENSBTAG00000003692
ENSBTAG00000002639	ENSBTAG00000002931	ENSBTAG00000003215	ENSBTAG00000003469	ENSBTAG00000003695
ENSBTAG00000002644	ENSBTAG00000002940	ENSBTAG00000003217	ENSBTAG00000003476	ENSBTAG00000003696
ENSBTAG00000002647	ENSBTAG00000002941	ENSBTAG00000003220	ENSBTAG00000003481	ENSBTAG00000003700
ENSBTAG00000002648	ENSBTAG00000002947	ENSBTAG00000003221	ENSBTAG00000003489	ENSBTAG00000003710

ENSBTAG00000003721	ENSBTAG00000003997	ENSBTAG00000004367	ENSBTAG00000004732	ENSBTAG00000004992
ENSBTAG00000003728	ENSBTAG00000004000	ENSBTAG00000004368	ENSBTAG00000004738	ENSBTAG00000004994
ENSBTAG00000003733	ENSBTAG00000004018	ENSBTAG00000004371	ENSBTAG00000004745	ENSBTAG00000005002
ENSBTAG00000003741	ENSBTAG00000004024	ENSBTAG00000004375	ENSBTAG00000004755	ENSBTAG00000005008
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ENSBTAG00000003746	ENSBTAG00000004038	ENSBTAG00000004380	ENSBTAG00000004772	ENSBTAG00000005015
ENSBTAG00000003749	ENSBTAG00000004041	ENSBTAG00000004386	ENSBTAG00000004777	ENSBTAG00000005018
ENSBTAG00000003752	ENSBTAG00000004043	ENSBTAG00000004388	ENSBTAG00000004782	ENSBTAG00000005021
ENSBTAG00000003758	ENSBTAG00000004048	ENSBTAG00000004394	ENSBTAG00000004783	ENSBTAG00000005039
ENSBTAG00000003762	ENSBTAG00000004066	ENSBTAG00000004398	ENSBTAG00000004787	ENSBTAG00000005043
ENSBTAG00000003766	ENSBTAG00000004072	ENSBTAG00000004403	ENSBTAG00000004788	ENSBTAG00000005048
ENSBTAG00000003784	ENSBTAG00000004073	ENSBTAG00000004422	ENSBTAG00000004796	ENSBTAG00000005052
ENSBTAG00000003786	ENSBTAG00000004075	ENSBTAG00000004440	ENSBTAG00000004801	ENSBTAG00000005062
ENSBTAG00000003793	ENSBTAG00000004077	ENSBTAG00000004442	ENSBTAG00000004806	ENSBTAG00000005069
ENSBTAG00000003798	ENSBTAG00000004079	ENSBTAG00000004457	ENSBTAG00000004822	ENSBTAG00000005077
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ENSBTAG00000003806	ENSBTAG00000004097	ENSBTAG00000004462	ENSBTAG00000004826	ENSBTAG00000005086
ENSBTAG00000003808	ENSBTAG00000004117	ENSBTAG00000004484	ENSBTAG00000004840	ENSBTAG00000005090
ENSBTAG00000003809	ENSBTAG00000004126	ENSBTAG00000004494	ENSBTAG00000004850	ENSBTAG00000005092
ENSBTAG00000003813	ENSBTAG00000004145	ENSBTAG00000004514	ENSBTAG00000004852	ENSBTAG00000005093
ENSBTAG00000003815	ENSBTAG00000004150	ENSBTAG00000004515	ENSBTAG00000004854	ENSBTAG00000005094
ENSBTAG00000003826	ENSBTAG00000004159	ENSBTAG00000004517	ENSBTAG00000004864	ENSBTAG00000005096
ENSBTAG00000003830	ENSBTAG00000004175	ENSBTAG00000004526	ENSBTAG00000004873	ENSBTAG00000005102
ENSBTAG00000003833	ENSBTAG00000004184	ENSBTAG00000004541	ENSBTAG00000004876	ENSBTAG00000005108
ENSBTAG00000003836	ENSBTAG00000004189	ENSBTAG00000004542	ENSBTAG00000004877	ENSBTAG00000005110
ENSBTAG00000003837	ENSBTAG00000004193	ENSBTAG00000004547	ENSBTAG00000004879	ENSBTAG00000005111
ENSBTAG00000003840	ENSBTAG00000004208	ENSBTAG00000004555	ENSBTAG00000004881	ENSBTAG00000005119
ENSBTAG00000003851	ENSBTAG00000004211	ENSBTAG00000004558	ENSBTAG00000004884	ENSBTAG00000005127
ENSBTAG00000003856	ENSBTAG00000004215	ENSBTAG00000004564	ENSBTAG00000004891	ENSBTAG00000005143
ENSBTAG00000003864	ENSBTAG00000004223	ENSBTAG00000004568	ENSBTAG00000004895	ENSBTAG00000005161
ENSBTAG00000003871	ENSBTAG00000004225	ENSBTAG00000004578	ENSBTAG00000004905	ENSBTAG00000005165
ENSBTAG00000003876	ENSBTAG00000004230	ENSBTAG00000004587	ENSBTAG00000004906	ENSBTAG00000005168
ENSBTAG00000003877	ENSBTAG00000004231	ENSBTAG00000004588	ENSBTAG00000004908	ENSBTAG00000005186
ENSBTAG00000003880	ENSBTAG00000004237	ENSBTAG00000004591	ENSBTAG00000004910	ENSBTAG00000005189
ENSBTAG00000003887	ENSBTAG00000004261	ENSBTAG00000004604	ENSBTAG00000004920	ENSBTAG00000005205
ENSBTAG00000003895	ENSBTAG00000004262	ENSBTAG00000004613	ENSBTAG00000004922	ENSBTAG00000005206
ENSBTAG00000003902	ENSBTAG00000004269	ENSBTAG00000004617	ENSBTAG00000004937	ENSBTAG00000005215
ENSBTAG00000003915	ENSBTAG00000004271	ENSBTAG00000004631	ENSBTAG00000004942	ENSBTAG00000005218
ENSBTAG00000003934	ENSBTAG00000004280	ENSBTAG00000004641	ENSBTAG00000004948	ENSBTAG00000005225
ENSBTAG00000003944	ENSBTAG00000004288	ENSBTAG00000004651	ENSBTAG00000004952	ENSBTAG00000005231
ENSBTAG00000003955	ENSBTAG00000004295	ENSBTAG00000004657	ENSBTAG00000004956	ENSBTAG00000005235
ENSBTAG00000003956	ENSBTAG00000004300	ENSBTAG00000004660	ENSBTAG00000004965	ENSBTAG00000005236
ENSBTAG00000003958	ENSBTAG00000004305	ENSBTAG00000004685	ENSBTAG00000004970	ENSBTAG00000005238
ENSBTAG00000003965	ENSBTAG00000004321	ENSBTAG00000004688	ENSBTAG00000004975	ENSBTAG00000005244
ENSBTAG00000003966	ENSBTAG00000004343	ENSBTAG00000004720	ENSBTAG00000004979	ENSBTAG00000005247
ENSBTAG00000003994	ENSBTAG00000004348	ENSBTAG00000004723	ENSBTAG00000004989	ENSBTAG00000005249

ENSBTAG00000005259	ENSBTAG00000005493	ENSBTAG00000005793	ENSBTAG00000006029	ENSBTAG00000006326
ENSBTAG00000005260	ENSBTAG00000005496	ENSBTAG00000005795	ENSBTAG00000006030	ENSBTAG00000006342
ENSBTAG00000005261	ENSBTAG00000005498	ENSBTAG00000005796	ENSBTAG00000006035	ENSBTAG00000006345
ENSBTAG00000005263	ENSBTAG00000005503	ENSBTAG00000005800	ENSBTAG00000006039	ENSBTAG00000006346
ENSBTAG00000005265	ENSBTAG00000005523	ENSBTAG00000005807	ENSBTAG00000006044	ENSBTAG00000006354
ENSBTAG00000005273	ENSBTAG00000005534	ENSBTAG00000005815	ENSBTAG00000006051	ENSBTAG00000006359
ENSBTAG00000005278	ENSBTAG00000005536	ENSBTAG00000005828	ENSBTAG00000006064	ENSBTAG00000006363
ENSBTAG00000005284	ENSBTAG00000005540	ENSBTAG00000005830	ENSBTAG00000006066	ENSBTAG00000006364
ENSBTAG00000005286	ENSBTAG00000005542	ENSBTAG00000005841	ENSBTAG00000006067	ENSBTAG00000006366
ENSBTAG00000005294	ENSBTAG00000005550	ENSBTAG00000005844	ENSBTAG00000006069	ENSBTAG00000006369
ENSBTAG00000005305	ENSBTAG00000005574	ENSBTAG00000005845	ENSBTAG00000006075	ENSBTAG00000006371
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ENSBTAG00000005314	ENSBTAG00000005581	ENSBTAG00000005850	ENSBTAG00000006081	ENSBTAG00000006386
ENSBTAG00000005333	ENSBTAG00000005584	ENSBTAG00000005851	ENSBTAG00000006082	ENSBTAG00000006391
ENSBTAG00000005337	ENSBTAG00000005586	ENSBTAG00000005854	ENSBTAG00000006084	ENSBTAG00000006393
ENSBTAG00000005345	ENSBTAG00000005589	ENSBTAG00000005865	ENSBTAG00000006101	ENSBTAG00000006396
ENSBTAG00000005353	ENSBTAG00000005604	ENSBTAG00000005868	ENSBTAG00000006103	ENSBTAG00000006404
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ENSBTAG00000005367	ENSBTAG00000005622	ENSBTAG00000005909	ENSBTAG00000006133	ENSBTAG00000006420
ENSBTAG00000005372	ENSBTAG00000005630	ENSBTAG00000005913	ENSBTAG00000006135	ENSBTAG00000006429
ENSBTAG00000005373	ENSBTAG00000005633	ENSBTAG00000005917	ENSBTAG00000006140	ENSBTAG00000006434
ENSBTAG00000005382	ENSBTAG00000005635	ENSBTAG00000005932	ENSBTAG00000006141	ENSBTAG00000006439
ENSBTAG00000005390	ENSBTAG00000005639	ENSBTAG00000005933	ENSBTAG00000006165	ENSBTAG00000006441
ENSBTAG00000005393	ENSBTAG00000005644	ENSBTAG00000005945	ENSBTAG00000006170	ENSBTAG00000006446
ENSBTAG00000005397	ENSBTAG00000005650	ENSBTAG00000005946	ENSBTAG00000006173	ENSBTAG00000006449
ENSBTAG00000005403	ENSBTAG00000005654	ENSBTAG00000005947	ENSBTAG00000006182	ENSBTAG00000006463
ENSBTAG00000005410	ENSBTAG00000005660	ENSBTAG00000005957	ENSBTAG00000006199	ENSBTAG00000006466
ENSBTAG00000005412	ENSBTAG00000005665	ENSBTAG00000005958	ENSBTAG00000006202	ENSBTAG00000006471
ENSBTAG00000005414	ENSBTAG00000005666	ENSBTAG00000005963	ENSBTAG00000006209	ENSBTAG00000006474
ENSBTAG00000005416	ENSBTAG00000005668	ENSBTAG00000005965	ENSBTAG00000006222	ENSBTAG00000006478
ENSBTAG00000005419	ENSBTAG00000005675	ENSBTAG00000005967	ENSBTAG00000006227	ENSBTAG00000006479
ENSBTAG00000005426	ENSBTAG00000005682	ENSBTAG00000005969	ENSBTAG00000006231	ENSBTAG00000006482
ENSBTAG00000005431	ENSBTAG00000005691	ENSBTAG00000005970	ENSBTAG00000006232	ENSBTAG00000006486
ENSBTAG00000005432	ENSBTAG00000005693	ENSBTAG00000005974	ENSBTAG00000006240	ENSBTAG00000006487
ENSBTAG00000005434	ENSBTAG00000005697	ENSBTAG00000005985	ENSBTAG00000006241	ENSBTAG00000006491
ENSBTAG00000005439	ENSBTAG00000005709	ENSBTAG00000005989	ENSBTAG00000006242	ENSBTAG00000006499
ENSBTAG00000005441	ENSBTAG00000005715	ENSBTAG00000005997	ENSBTAG00000006246	ENSBTAG00000006500
ENSBTAG00000005442	ENSBTAG00000005729	ENSBTAG00000005999	ENSBTAG00000006247	ENSBTAG00000006505
ENSBTAG00000005454	ENSBTAG00000005738	ENSBTAG00000006007	ENSBTAG00000006253	ENSBTAG00000006515
ENSBTAG00000005462	ENSBTAG00000005756	ENSBTAG00000006013	ENSBTAG00000006287	ENSBTAG00000006520
ENSBTAG00000005470	ENSBTAG00000005760	ENSBTAG00000006014	ENSBTAG00000006296	ENSBTAG00000006531
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