

Krt9 Cas9-KO Strategy

Designer:

Huan Fan

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Project Overview

Project Name

Krt9

Project type

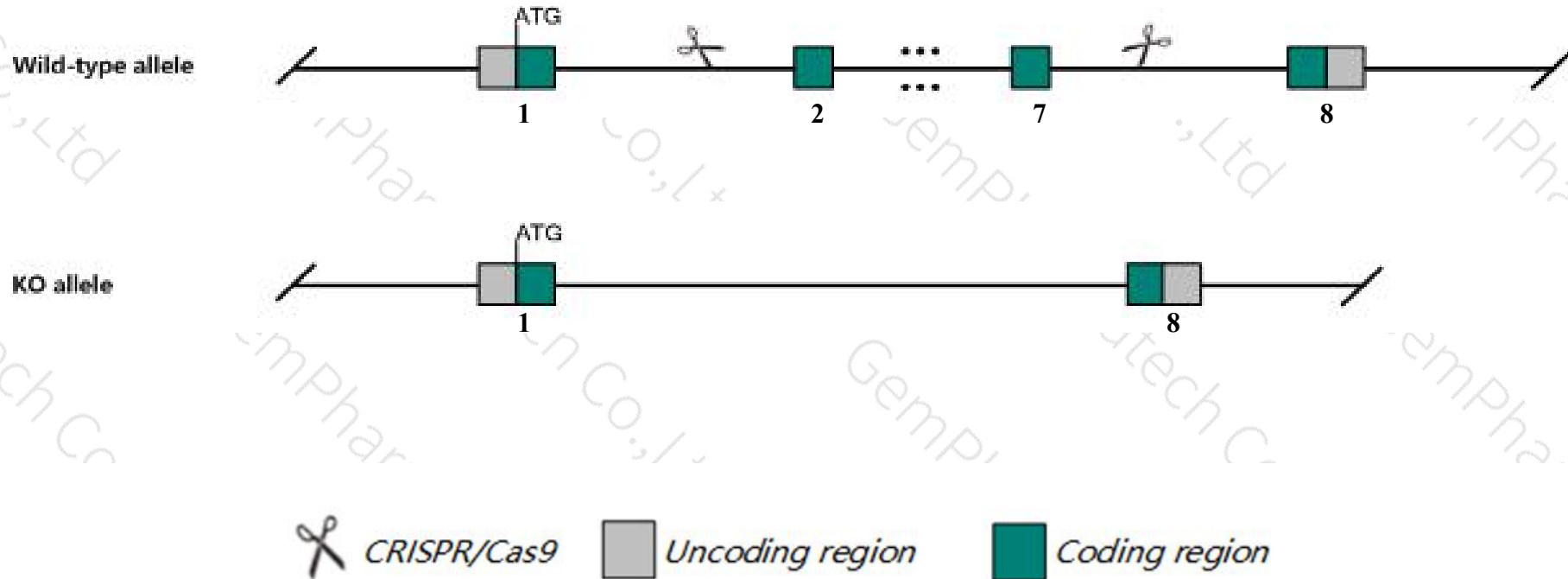
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Krt9* gene. The schematic diagram is as follows:



- The *Krt9* gene has 1 transcript. According to the structure of *Krt9* gene, exon2-exon7 of *Krt9-201* (ENSMUST00000059707.2) transcript is recommended as the knockout region. The region contains 1636bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Krt9* gene. The brief process is as follows: CRISPR/Cas9 system w

- According to the existing MGI data, Mice homozygous for a knock-out allele exhibit hyperpigmented calluses on the footpad with acanthosis, hyperkeratosis, thick epidermis and increased keratinocyte proliferation.
- The *Krt9* gene is located on the Chr11. If the knockout mice are crossed with other mice strains to obtain double gene positive homozygous mouse offspring, please avoid the two genes on the same chromosome.
- This Strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risk of the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Krt9 keratin 9 [Mus musculus (house mouse)]

Gene ID: 107656, updated on 31-Jan-2019

Summary



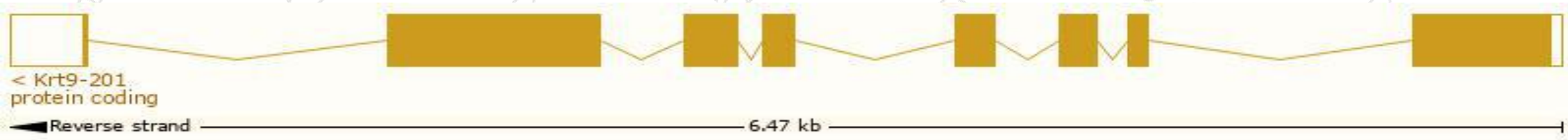
Official Symbol	Krt9 provided by MGI
Official Full Name	keratin 9 provided by MGI
Primary source	MGI:MGI:96696
See related	Ensembl:ENSMUSG00000051617
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	EPPK, K9, Krt1-9
Expression	Biased expression in frontal lobe adult (RPKM 2.3), cortex adult (RPKM 1.4) and 2 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

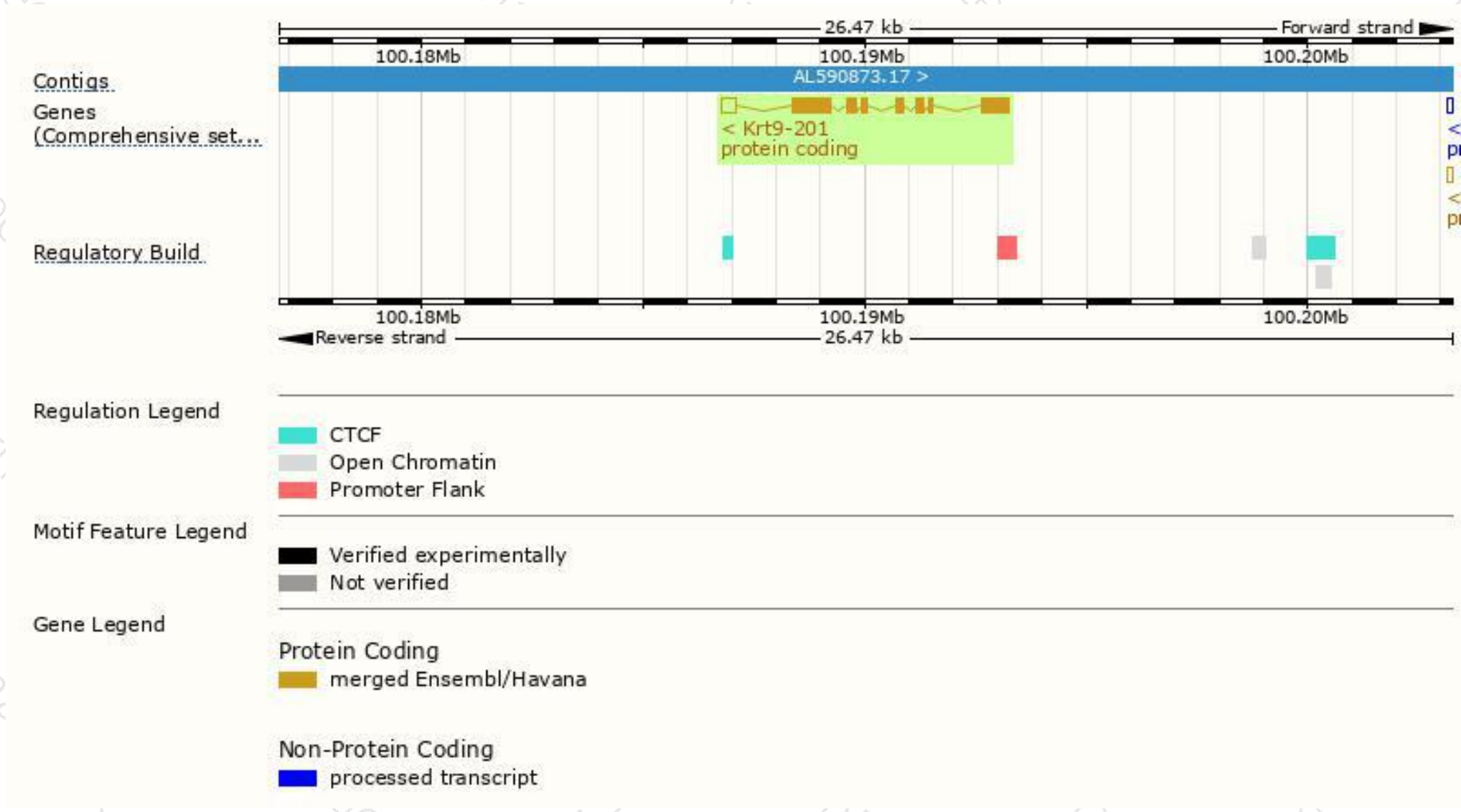
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Krt9-201	ENSMUST00000059707.2	2580	743aa	Protein coding	CCDS25412	Q6RHW0	TSL:1 GENCODE basic APPRIS P1

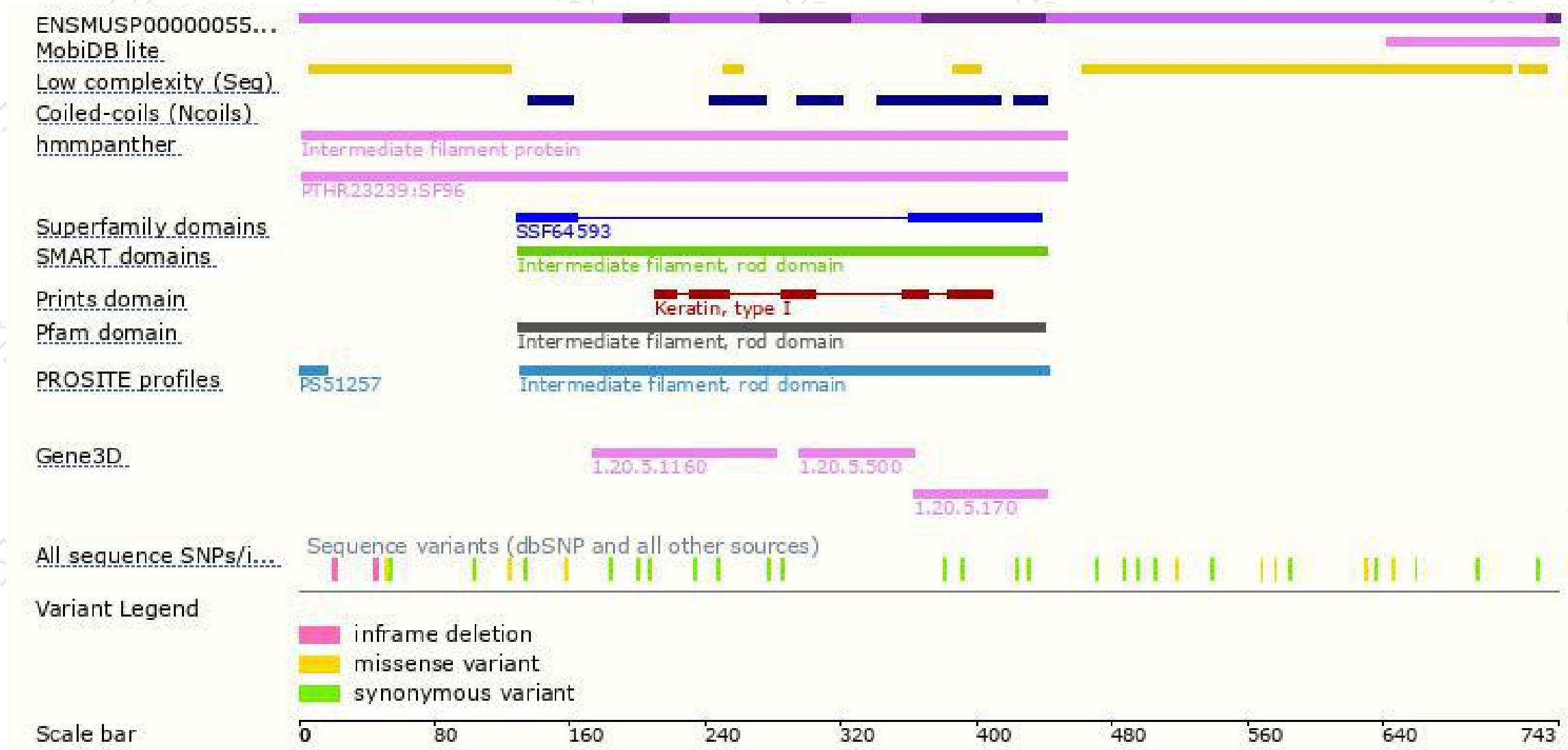
The strategy is based on the design of *Krt9-201* transcript, The transcription is shown below



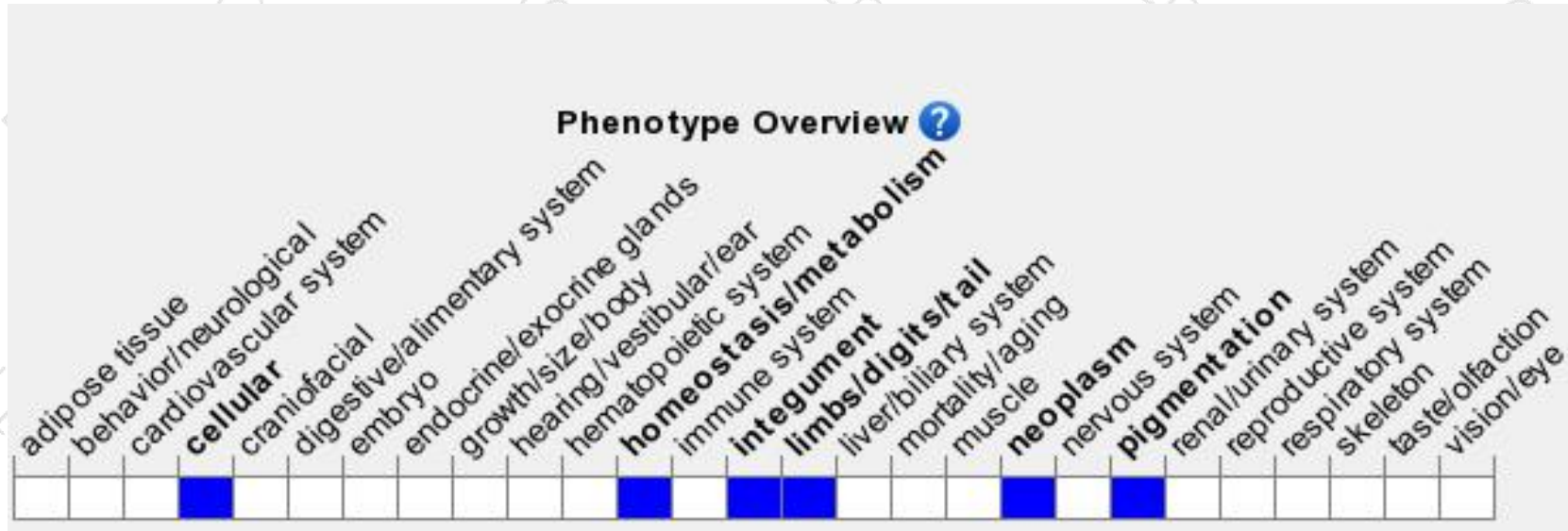
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

According to the existing MGI data, Mice homozygous for a knock-out allele exhibit hyperpigmented calluses on the footpad with acanthosis, hyperkeratosis, thick epidermis and increased keratinocyte proliferation.

If you have any questions, you are welcome to inquire.

Tel: 400-9660890

