

***Kdm6b* CKO Strategy**

Designer:

Qiong Zhou

Project Overview

Project Name

Kdm6b

Project type

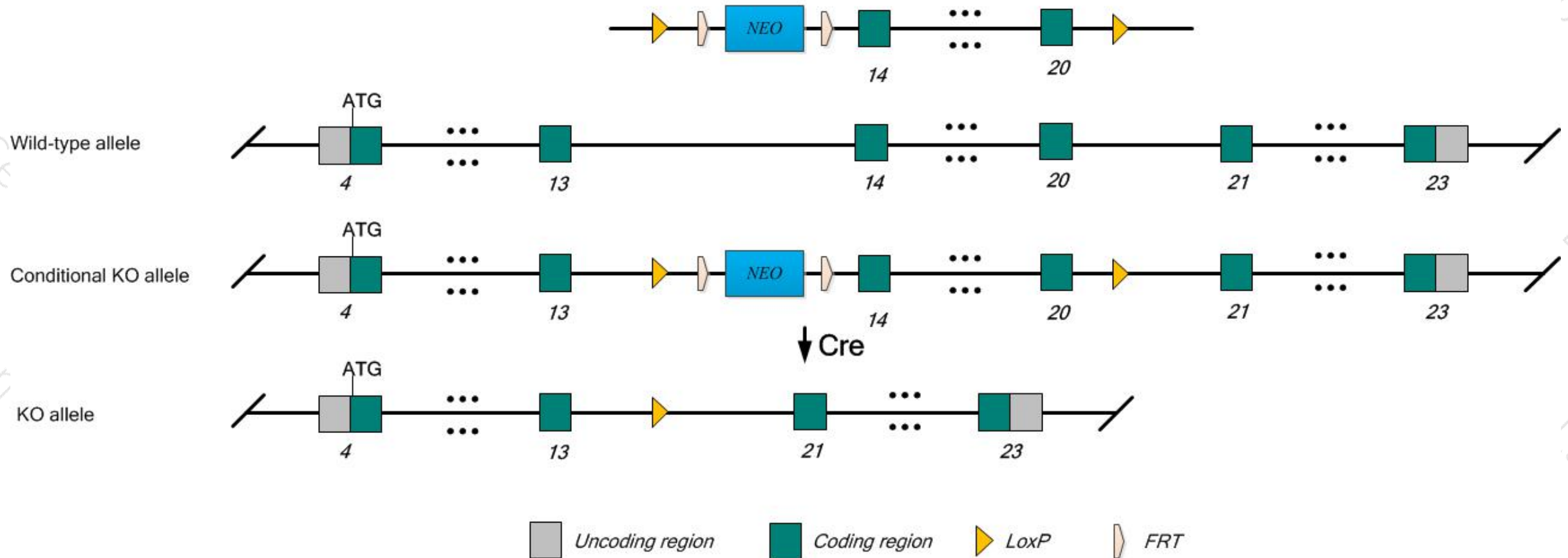
CKO

Strain background

C57BL/6N

Conditional Knockout strategy

➤ This model will use ES cell mediated homologous recombination technology to edit the *Kdm6b* gene. The schematic diagram is as follows:



- The *Kdm6b* gene has 2 transcripts. According to the structure of *Kdm6b* gene, exon14-20 of *Kdm6b-201* (ENSMUST00000094077.4) transcript is recommended as the knockout region. The region contains 937bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use ES cell targeting and homologous recombination technology to modify *Kdm6b* gene. The brief process is as follows: the targeting vector is constructed in vitro and the ES cells are electroporated. The ES clones screened by PCR and southern are injected into the donor blastocysts and transplanted into the pseudo-pregnant mother to further develop chimeric mice. A stable F1 generation mouse model was obtained by mating chimeric mice with C57BL/6N mice.
- The flox mice was knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues or cell types.

- According to the existing MGI data, Mice homozygous for a null allele show perinatal death, thick alveolar septum, and absence of air space in the lungs. Mice homozygous for a different null allele die neonatally displaying abnormal lung development, dwarfism, kyphosis, short limbs, and a severe delay in endochondral ossification.
- The KO region contains functional region of the *Kdm6b*-201 gene. Knockout the region may affect the function of *Kdm6b*-201 gene.
- The position of *Kdm6b* gene and *Tmem88*-201 gene is adjacent. Knockout the region may affect the function of the *Tmem88*-201 gene.
- The *Kdm6b* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Kdm6b KDM1 lysine (K)-specific demethylase 6B [*Mus musculus* (house mouse)]

Gene ID: 216850, updated on 3-Mar-2019

Summary

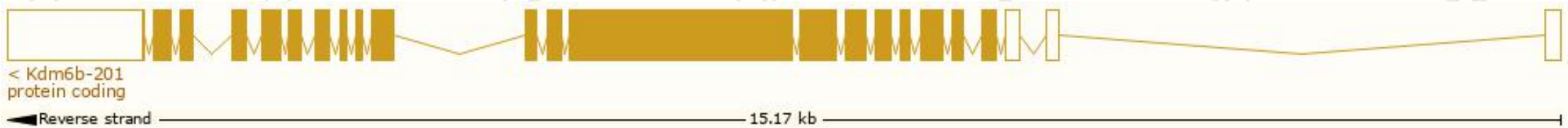
Official Symbol	Kdm6b provided by MGI
Official Full Name	KDM1 lysine (K)-specific demethylase 6B provided by MGI
Primary source	MGI:MGI:2448492
See related	Ensembl:ENSMUSG000000018476
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Jmjd3; BC038313; 1700064E03Rik
Expression	Ubiquitous expression in thymus adult (RPKM 16.9), duodenum adult (RPKM 10.2) and 25 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

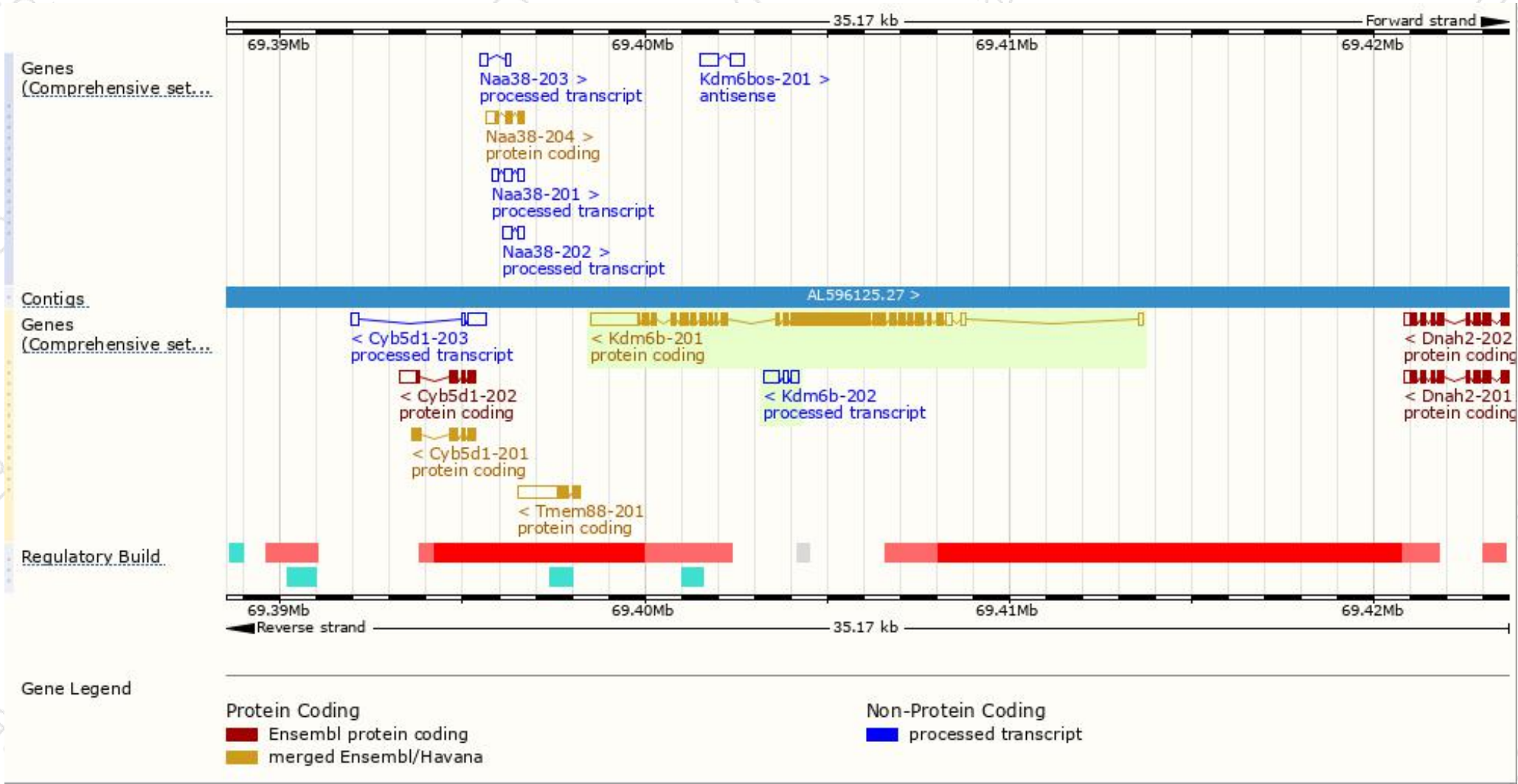
The gene has 2 transcripts, and all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Kdm6b-201	ENSMUST00000094077.4	6654	1641aa	Protein coding	CCDS24895	Q5NCY0	TSL:5 Gencode basic APPRIS P1
Kdm6b-202	ENSMUST00000156562.1	743	No protein	Processed transcript	-	-	TSL:2

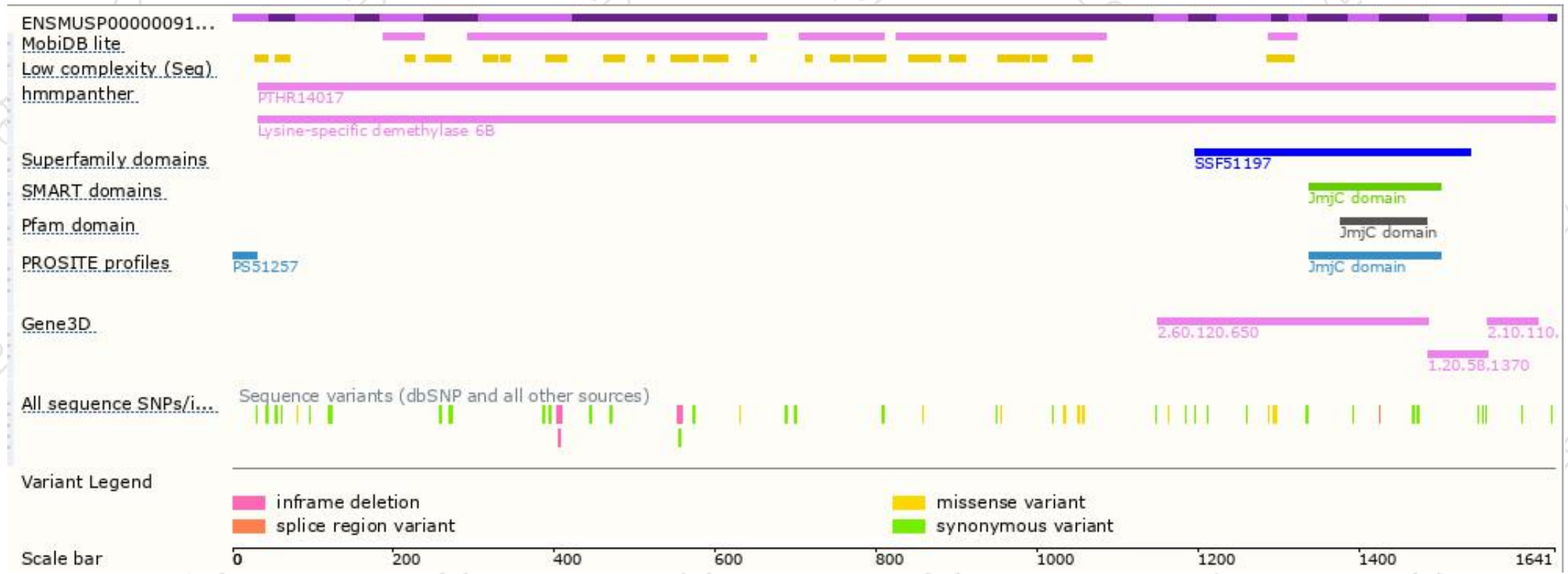
The strategy is based on the design of *Kdm6b*-201 transcript, The transcription is shown below



Genomic location distribution

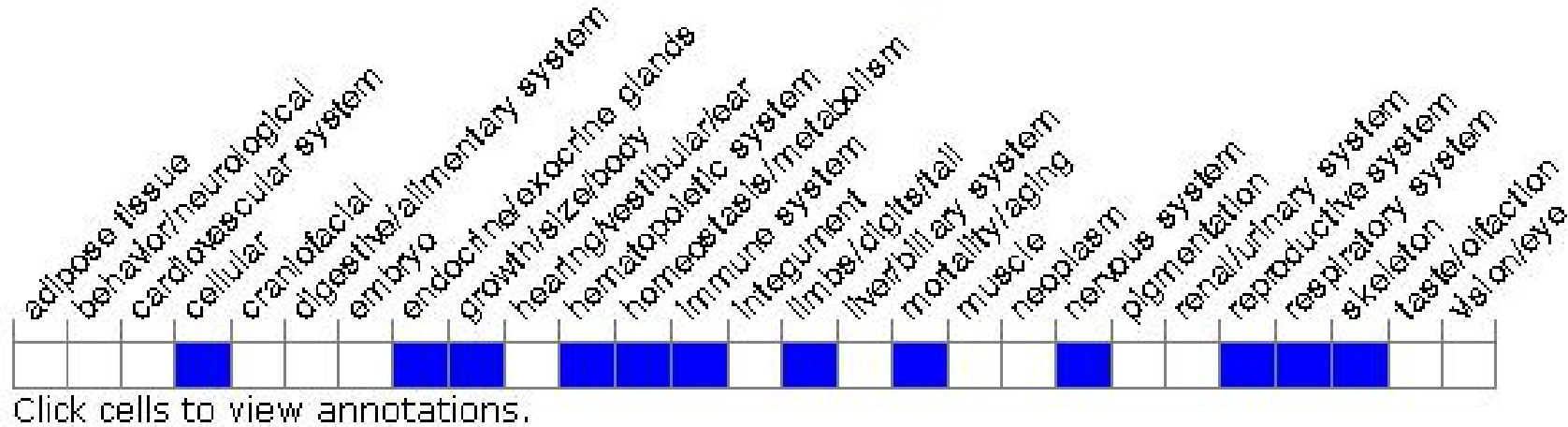


Protein domain



Mouse phenotype description(MGI)

Phenotype Overview ?



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

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If you have any questions, you are welcome to inquire.
Tel: 025-5864 1534



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