

***Trim72* Cas9-CKO Strategy**

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Reviewer:

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Design Date:

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Project Overview

Project Name

Trim72

Project type

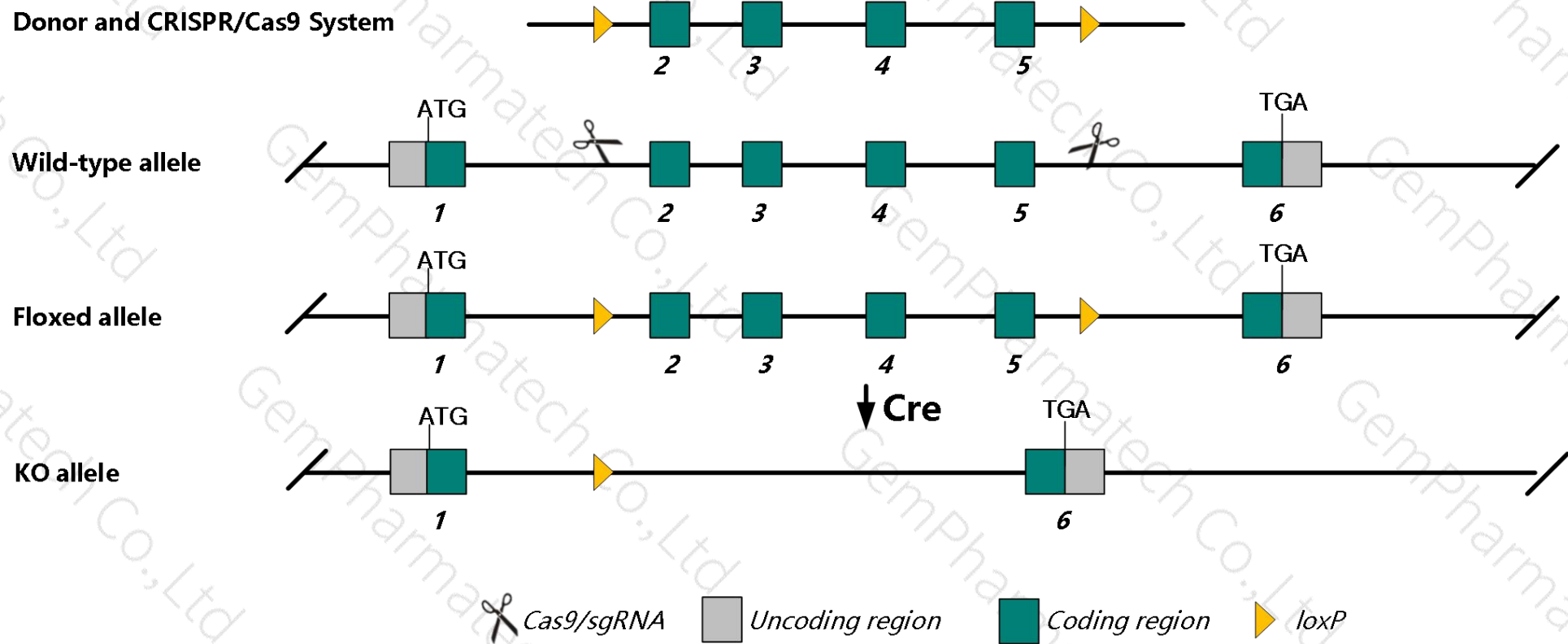
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Trim72* gene. The schematic diagram is as follows:



- The *Trim72* gene has 2 transcripts. According to the structure of *Trim72* gene, exon2-exon5 of *Trim72-201* (ENSMUST00000081042.5) transcript is recommended as the knockout region. The region contains 469bp code sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Trim72* gene. The brief process is as follows: gRNA was transcribed in vitro, donor was constructed. Cas9, gRNA and Donor were microinjected into the fertilized eggs of C57BL/6JGpt mice. Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.
- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

- According to the existing MGI data, Mice with disruption of this gene display muscle pathologies that develop with age. Mice homozygous for a knock-out allele exhibit enhanced myogenesis.
- The KO region overlaps with the *Gm15533* gene. Knockout the region may affect the function of *Gm15533* gene.
- The *Trim72* gene is located on the Chr7. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Trim72 tripartite motif-containing 72 [*Mus musculus* (house mouse)]

Gene ID: 434246, updated on 12-Aug-2019

Summary

Official Symbol Trim72 provided by [MGI](#)

Official Full Name tripartite motif-containing 72 provided by [MGI](#)

Primary source [MGI:MGI:3612190](#)

See related [Ensembl:ENSMUSG00000042828](#)

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 MG53; BC067209

Expression Biased expression in heart adult (RPKM 65.8), colon adult (RPKM 6.5) and 2 other tissues [See more](#)

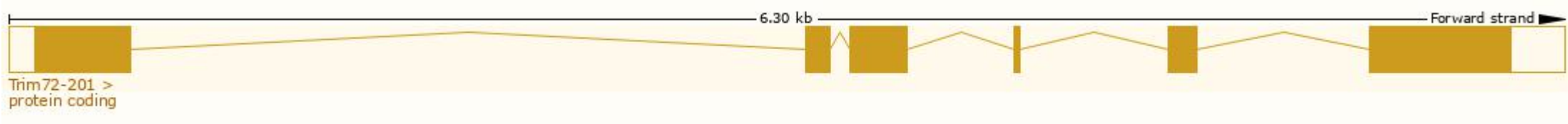
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

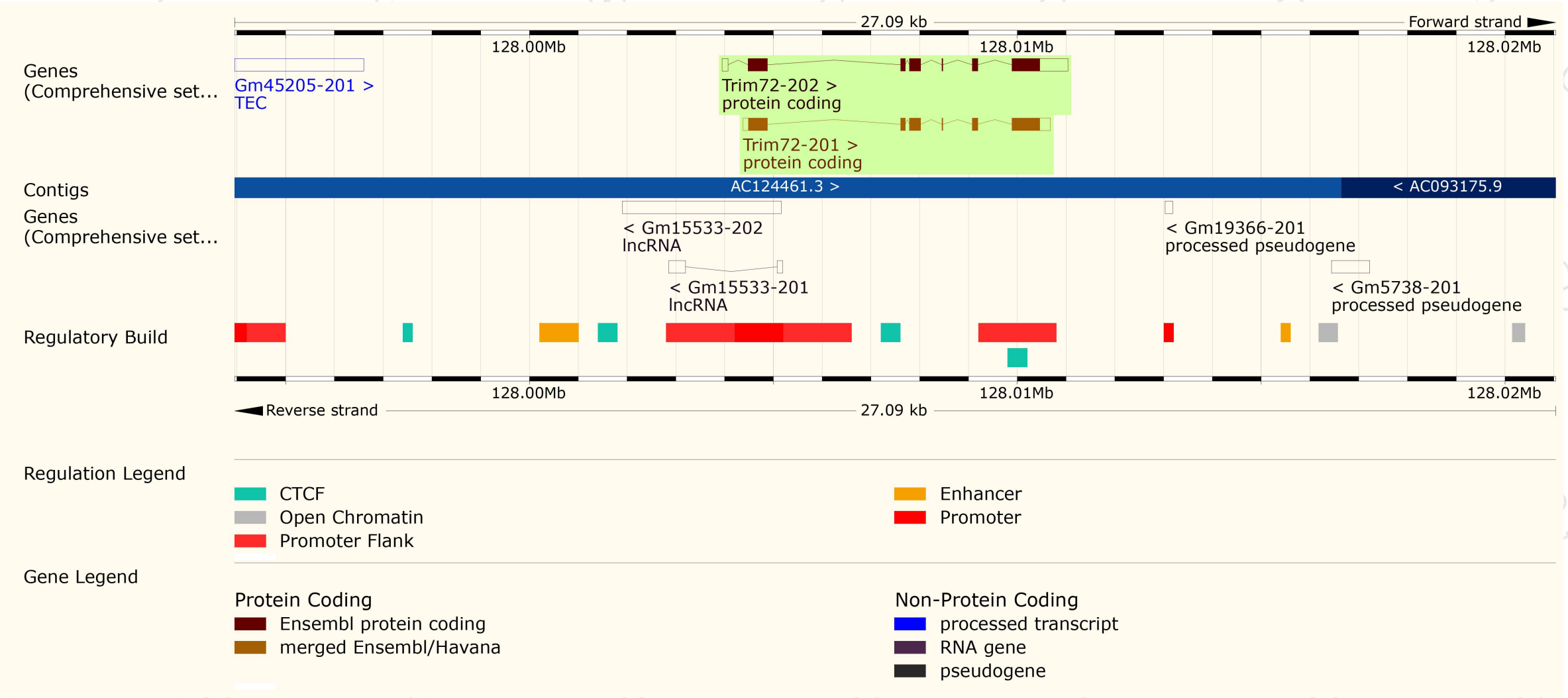
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Trim72-202	ENSMUST00000106248.7	2134	477aa	Protein coding	CCDS40148	Q1XH17	TSL:5 GENCODE basic APPRIS P1
Trim72-201	ENSMUST00000081042.5	1755	477aa	Protein coding	CCDS40148	Q1XH17	TSL:1 GENCODE basic APPRIS P1

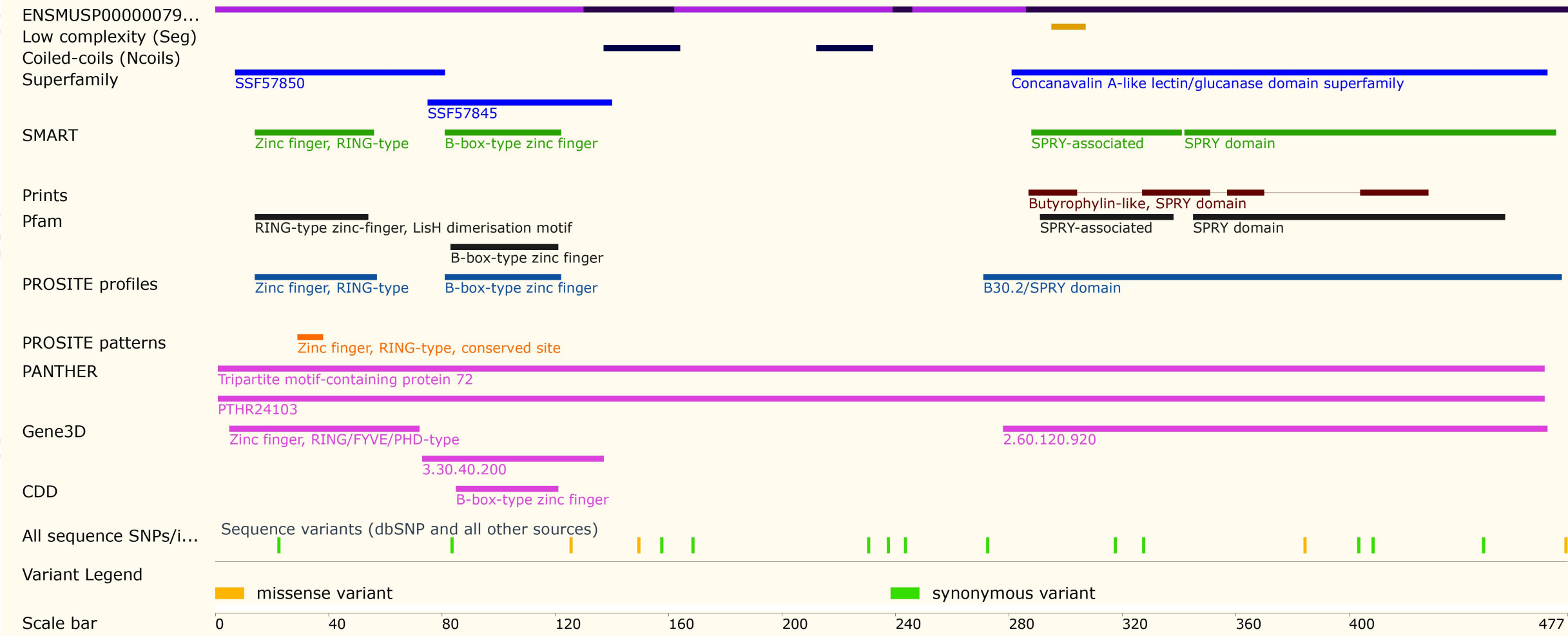
The strategy is based on the design of *Trim72-201* transcript,The transcription is shown below



Genomic location distribution

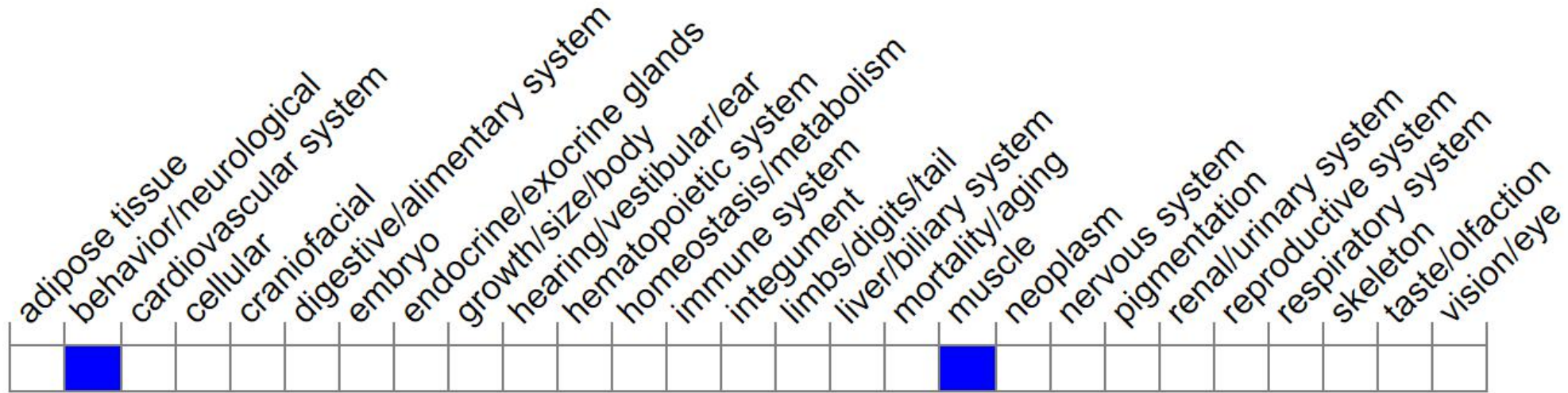


Protein domain



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.

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