

***Fmnl2* Cas9-KO Strategy**

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Project Overview

Project Name

Fmnl2

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Fmn12* gene. The schematic diagram is as follows:



- The *Fmnl2* gene has 5 transcripts. According to the structure of *Fmnl2* gene, exon2-exon4 of *Fmnl2-201* (ENSMUST00000049483.13) transcript is recommended as the knockout region. The region contains 242bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Fmnl2* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Fmnl2* gene is located on the Chr2. 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)

Fmnl2 formin-like 2 [*Mus musculus* (house mouse)]

Gene ID: 71409, updated on 27-Feb-2020

Summary

Official Symbol Fmnl2 provided by [MGI](#)
Official Full Name formin-like 2 provided by [MGI](#)
Primary source [MGI:MGI:1918659](#)
See related [Ensembl:ENSMUSG00000036053](#)
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 Man; 5430425K04Rik
Expression Broad expression in CNS E14 (RPKM 13.6), whole brain E14.5 (RPKM 12.6) and 19 other tissues [See more](#)
Orthologs [human](#) [all](#)

Genomic context

Location: 2; 2 C1.1

See Fmnl2 in [Genome Data Viewer](#)

Exon count: 30

Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	2	NC_000068.7 (52857717..53134202)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	2	NC_000068.6 (52716902..52993236)

Transcript information (Ensembl)

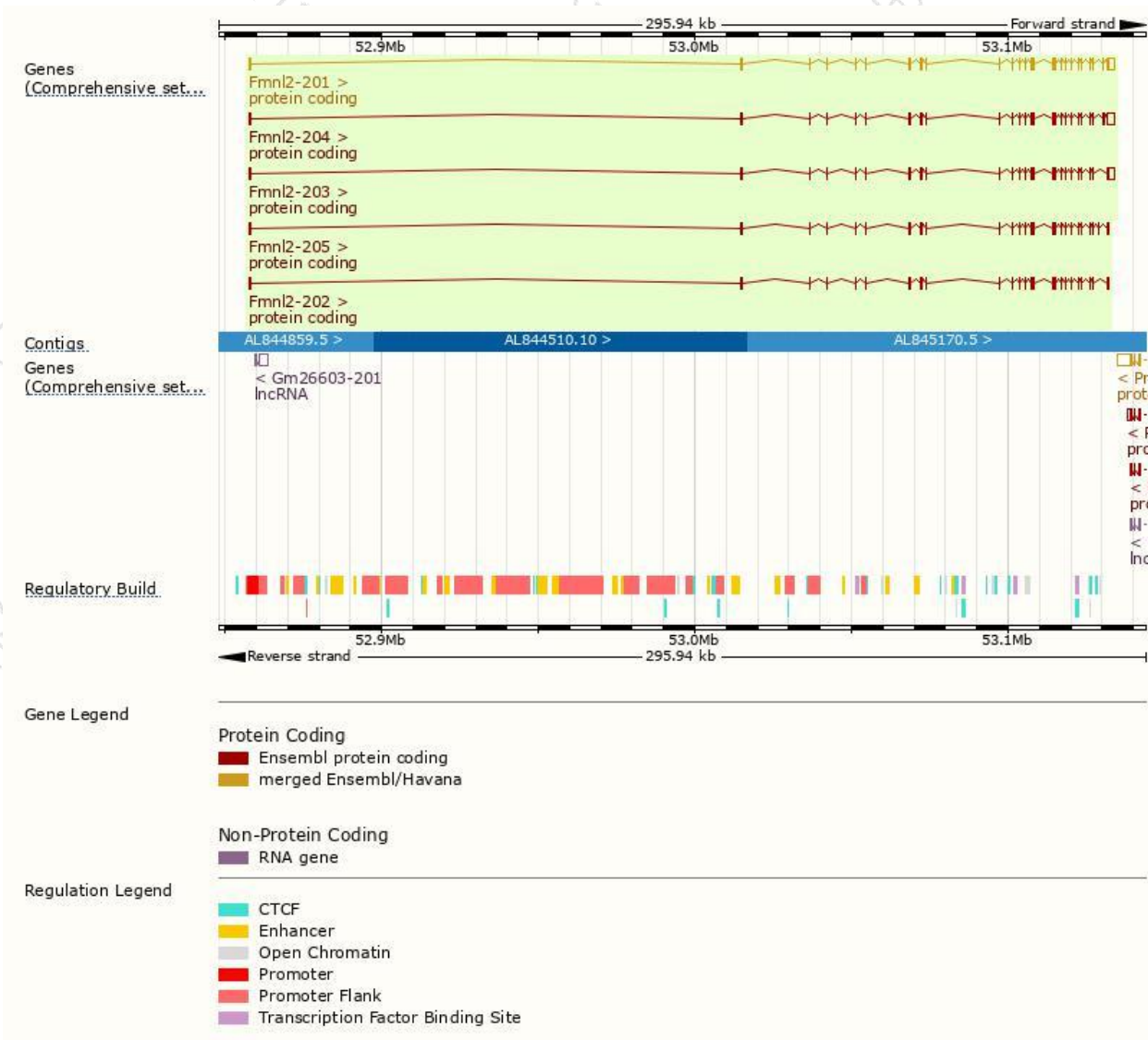
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Fmnl2-201	ENSMUST00000049483.13	5461	1083aa	Protein coding	CCDS38124	F8VPR2	TSL:5 GENCODE basic APPRIS P2
Fmnl2-204	ENSMUST00000127122.8	5508	1086aa	Protein coding	-	A2APV2	TSL:5 GENCODE basic APPRIS ALT2
Fmnl2-203	ENSMUST00000090952.10	5414	1091aa	Protein coding	-	A2APV2	TSL:5 GENCODE basic APPRIS ALT2
Fmnl2-205	ENSMUST00000155586.8	3939	1085aa	Protein coding	-	A2AQW2	TSL:1 GENCODE basic
Fmnl2-202	ENSMUST00000050719.12	3380	1034aa	Protein coding	-	E9PXE6	TSL:5 GENCODE basic

The strategy is based on the design of *Fmnl2-201* transcript,The transcription is shown below



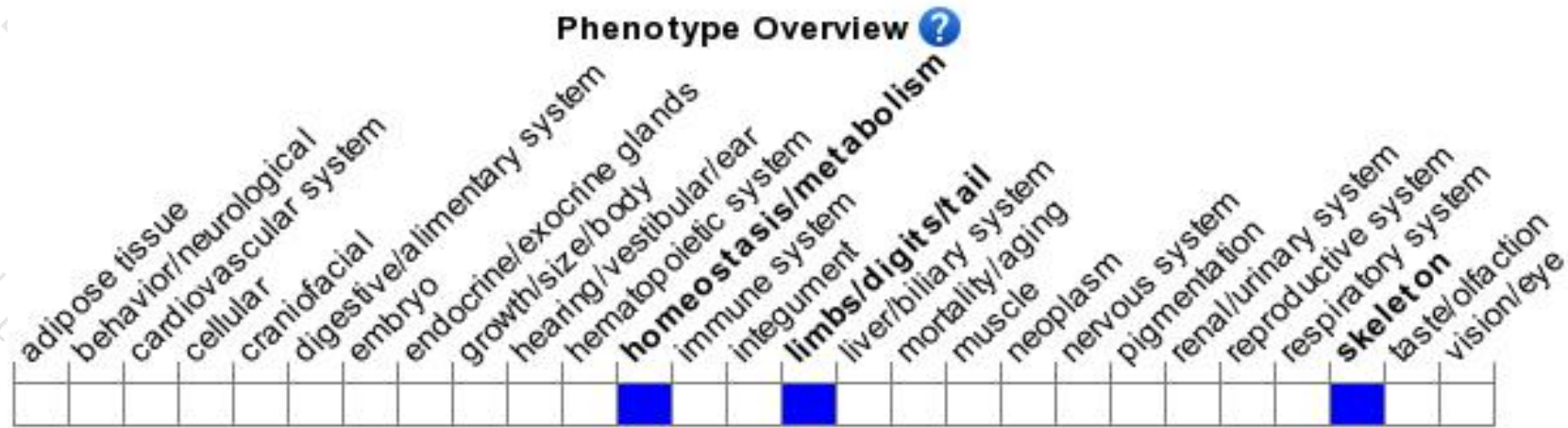
Genomic location distribution



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/>).

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

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