Jph1 Cas9-KO Strategy

Designer: Yanhua Shen
Reviewer：Xueting Zhang
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Project Overview

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Project Name	***Jph1***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Jph1* gene. The schematic diagram is as follows:

Technical routes

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- The *Jph1* gene has 2 transcripts. According to the structure of *Jph1* gene, exon2 of *Jph1-201* (ENSMUST00000038382.4) transcript is recommended as the knockout region.The region contains 760bp coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Jph1* gene. The brief process is as follows: CRISPR/Cas9 system w

Notice

- According to the existing MGI data,Homozygotes for a targeted null mutation fail to suckle and die shortly after birth. Mutants exhibit deficiencies of triad junctions and contraction in skeletal muscle.
- Transcript 202 may not be affected.
- *Gm28376-201* gene may be destroyed.
- The *Jph1* gene is located on the Chr1. 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）

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Jph1 junctophilin 1 [*Mus musculus* (house mouse)]

Gene ID: 57339, updated on 10-Oct-2019

Summary

Official Symbol	Jph1 provided by MGI
Official Full Name	junctophilin 1 provided by MGI
Primary source	MGI:MGI:1891495
See related	Ensembl:ENSMUSG00000042686
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	Jp1; JP-1
Expression	Broad expression in bladder adult (RPKM 4.8), cerebellum adult (RPKM 3.9) and 18 other tissues See more
Orthologs	human all

Genomic context

Location: 1; 1 A3

See Jph1 in Genome Data Viewer

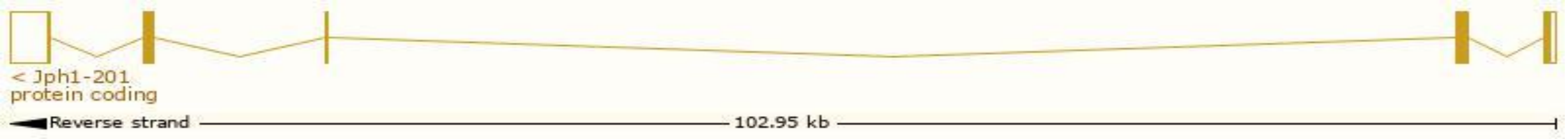
Exon count: 9

Transcript information（Ensembl）

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

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Jph1-201	ENSMUST00000038382.4	4809	660aa	Protein coding	CCDS14833	Q9ET80	TSL:1 GENCODE basic APPRIS P1
Jph1-202	ENSMUST00000186024.1	614	136aa	Nonsense mediated decay	-	A0A087WRN3	CDS 5' incomplete TSL:5

The strategy is based on the design of *Jph1-201* transcript,The transcription is shown below



Genomic location distribution

Gene Legend

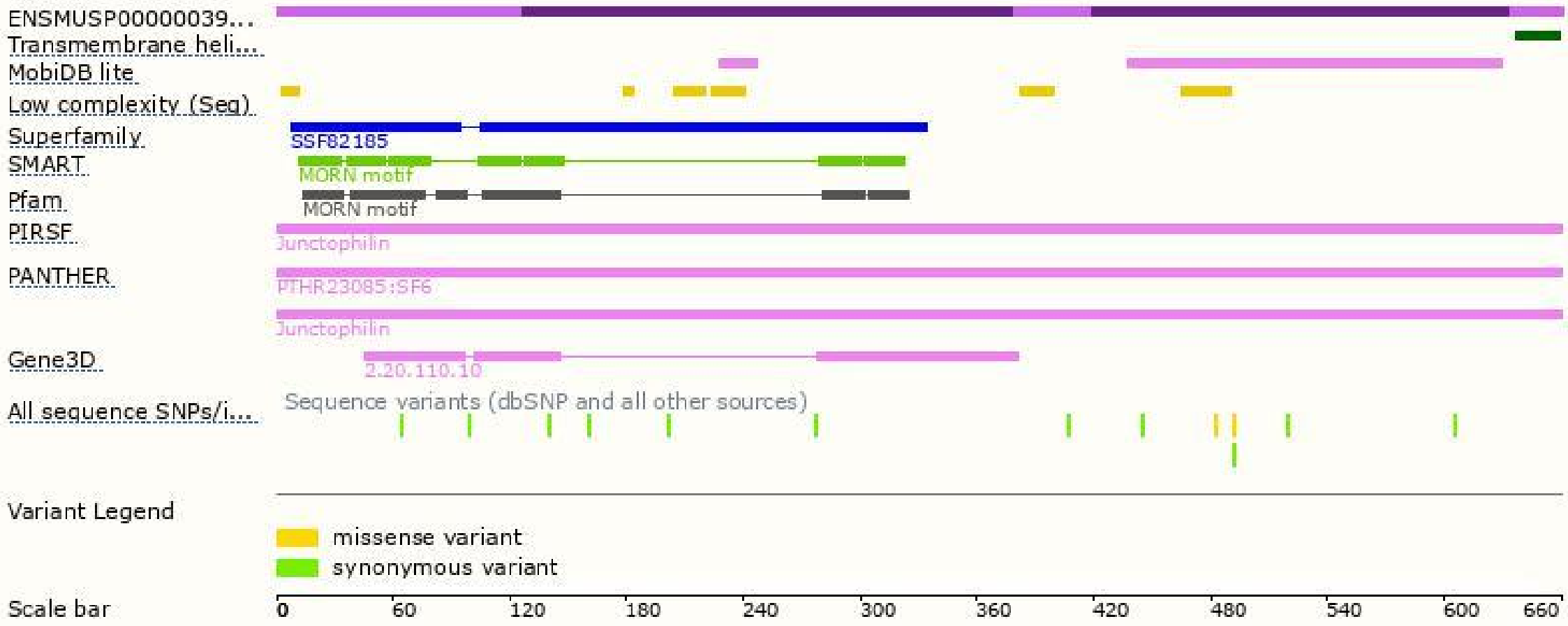
Protein Coding
- merged Ensembl/Havana

Non-Protein Coding
- processed transcript
- RNA gene

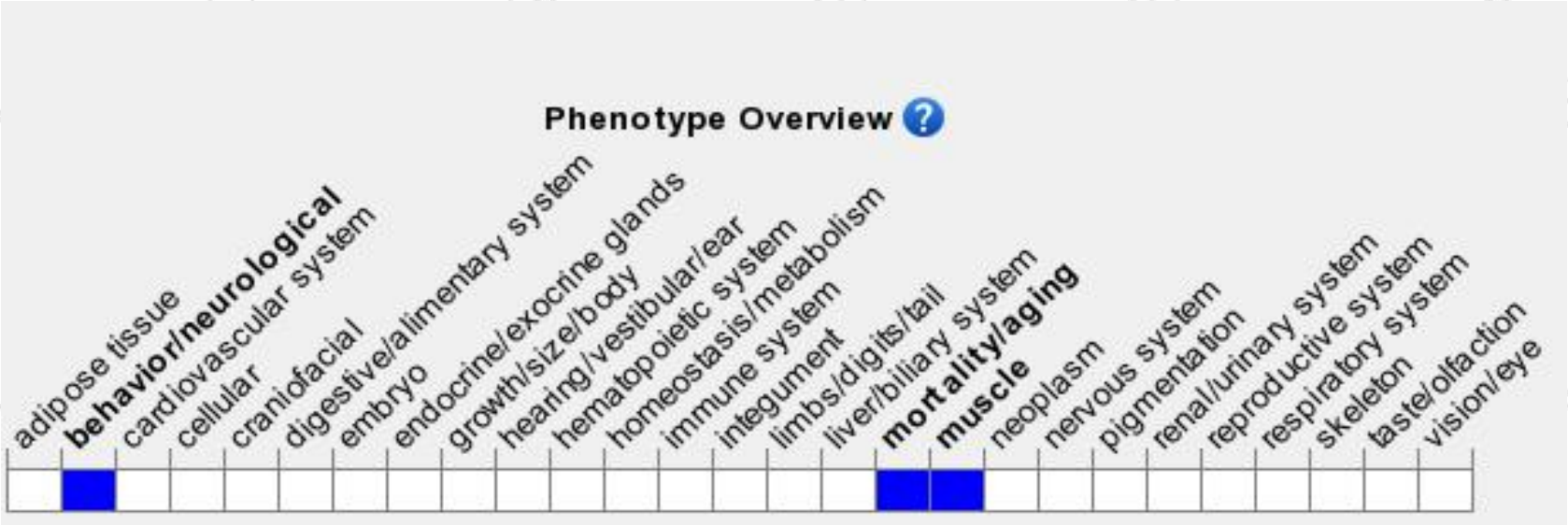
Regulation Legend

- CTCF
- Enhancer
- Open Chromatin
- Promoter
- Promoter Flank

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/).

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GemPharmatech

If you have any questions, you are welcome to inquire.
Tel: 400-9660890

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GemPharmatech Co.,Ltd