Raver1 Cas9-KO Strategy

Designer: JiaYu

Reviewer: Xiaojing Li

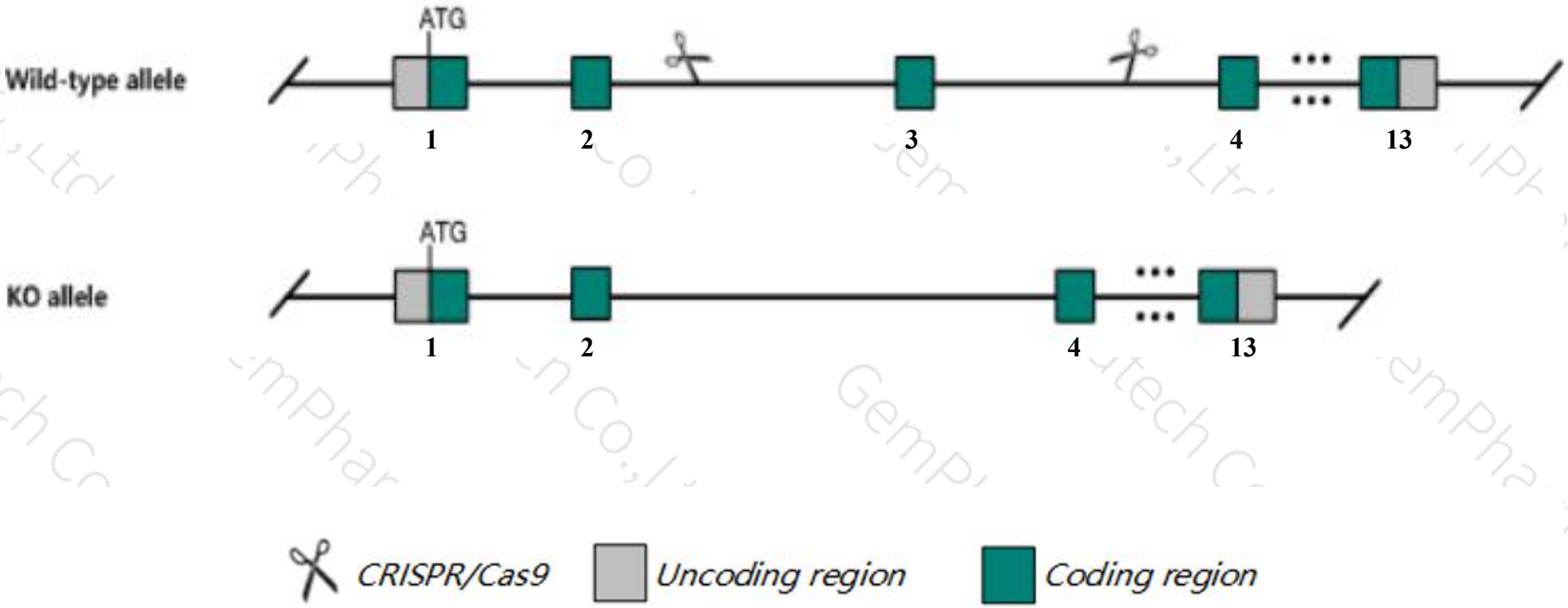
Design Date: 2020-3-4

Project Overview

Project Name	***Raver1***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Raver1* gene. The schematic diagram is as follows:



Technical routes

➢ The *Raver1* gene has 1 transcript. According to the structure of *Raver1* gene, exon3 of *Raver1-201* (ENSMUST00000115487.2) transcript is recommended as the knockout region.The region contains 470bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Raver1* gene. The brief process is as follows: CRISPR/Cas9 systen

Notice

➢ According to the existing MGI data,Mice homozygous for a null allele exhibit reduced long term potentiation and depression.

➢The flox region overlap with part of the Gm38431 gene, which may affect the regulation of this gene.

➢ The *Raver1* gene is located on the Chr9. 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）

集萃药康 GemPharmatech

Raver1 ribonucleoprotein, PTB-binding 1 [Mus musculus (house mouse)]

Gene ID: 71766, updated on 31-Jan-2019

Summary

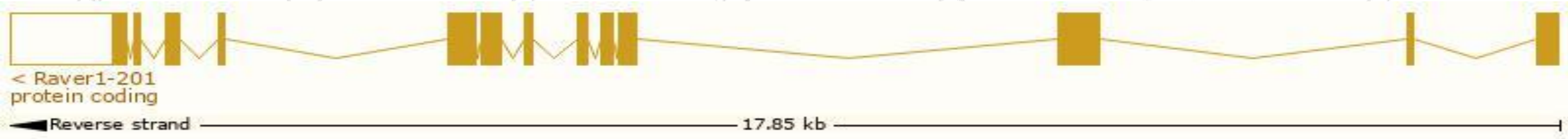
Official Symbol	Raver1 provided by MGI
Official Full Name	ribonucleoprotein, PTB-binding 1 provided by MGI
Primary source	MGI:MGI:1919016
See related	Ensembl:ENSMUSG00000010205
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1300006N24Rik, AA050359
Expression	Ubiquitous expression in thymus adult (RPKM 87.3), duodenum adult (RPKM 68.0) and 28 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

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

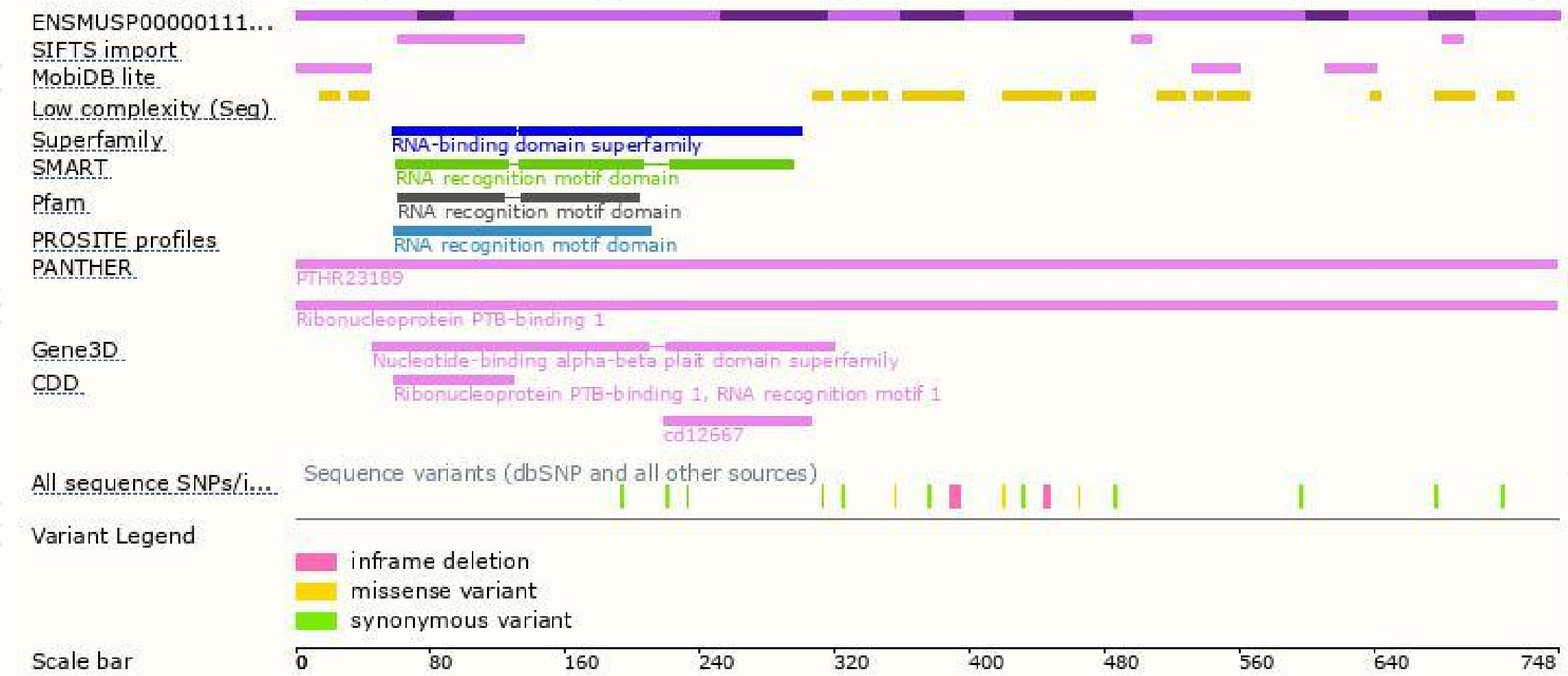
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Raver1-201	ENSMUST00000115487.2	3470	748aa	Protein coding	CCDS40550	A0A158RFV1 Q9CW46	TSL:1 GENCODE basic APPRIS P1

The strategy is based on the design of *Raver1-201* transcript,The transcription is shown below

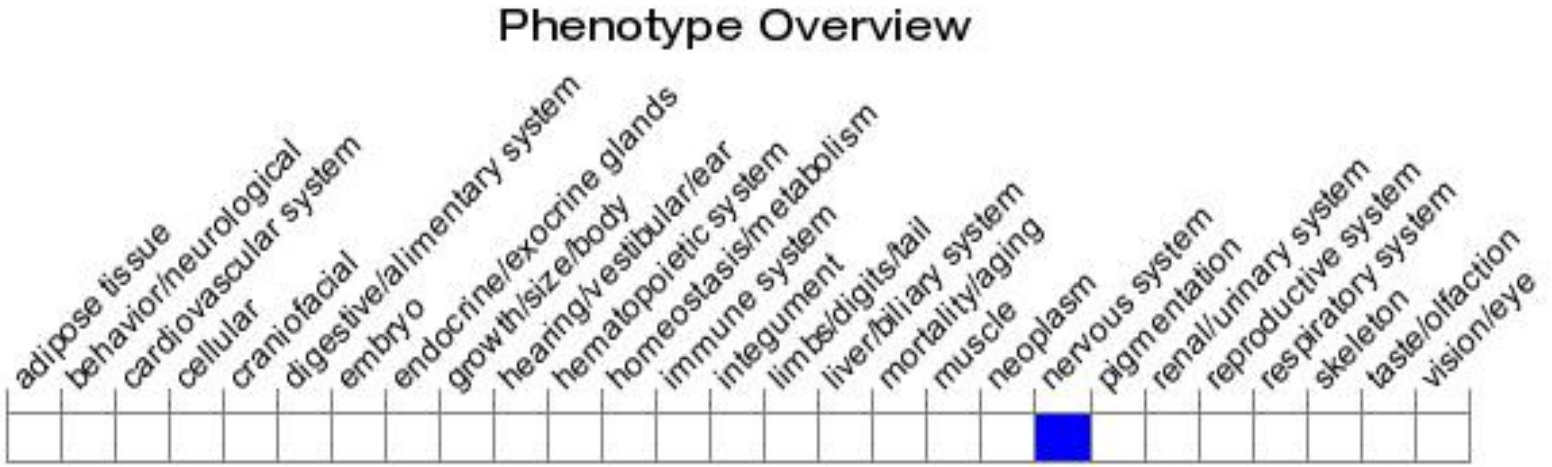


Genomic location distribution

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 null allele exhibit reduced long term potentiation and depression.

集萃药康
GemPharmatech

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

Tel: 400-9660890

集萃药康生物科技
GemPharmatech Co.,Ltd