Eif5a2 Cas9-KO Strategy

Designer: Xueting Zhang

Reviewer: Xiaojing Li

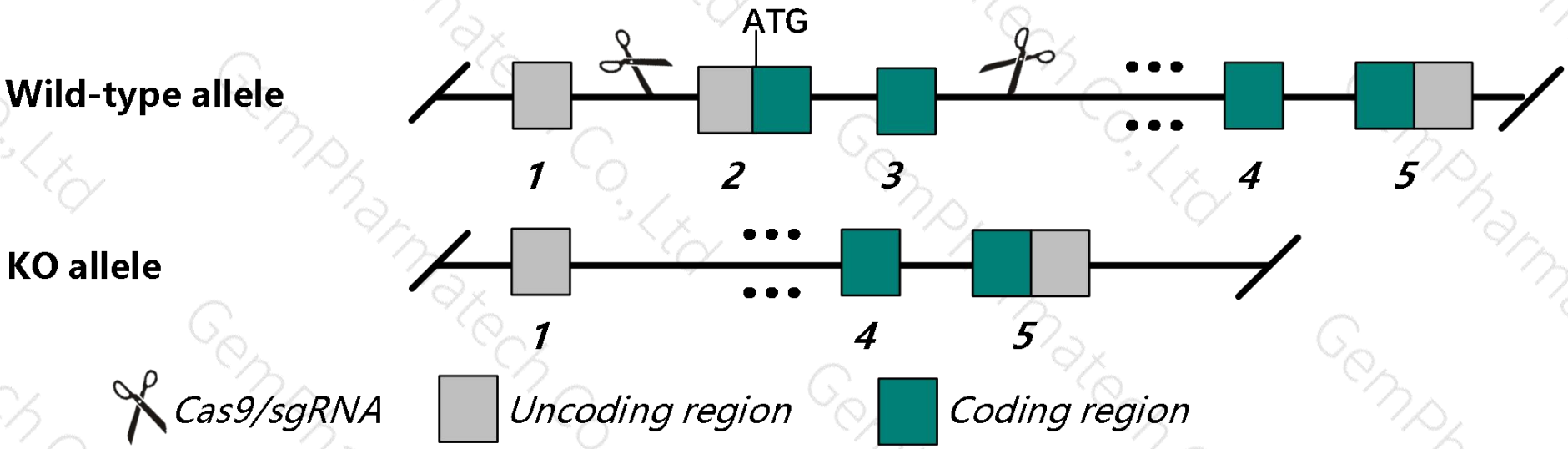
Design Date: 2020-5-26

Project Overview

Project Name	***Eif5a2***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Eif5a2* gene. The schematic diagram is as follows:



Technical routes

➢ The *Eif5a2* gene has 1 transcript. According to the structure of *Eif5a2* gene, exon2-exon3 of *Eif5a2-201* (ENSMUST00000060500.8) transcript is recommended as the knockout region.The region contains start codon ATG. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Eif5a2* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

➢ According to the existing MGI data,mice homozygous for a knockout allele exhibit no abnormal phenotype.

➢ The effect of remaining exon4 and exon5 of *Eif5a2* gene is unknown.

➢The knockout region is near to the N-terminal of *1700112D23Rik* gene,this strategy may influence the regulatory function of the N-terminal of *1700112D23Rik* gene.

➢ The *Eif5a2* gene is located on the Chr3. 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

Eif5a2 eukaryotic translation initiation factor 5A2 [Mus musculus (house mouse)]

Gene ID: 208691, updated on 13-Mar-2020

Summary

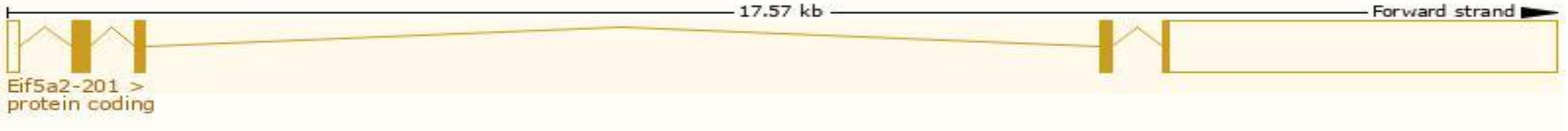
Official Symbol	Eif5a2 provided by MGI
Official Full Name	eukaryotic translation initiation factor 5A2 provided by MGI
Primary source	MGI:MGI:1933735
See related	Ensembl:ENSMUSG00000050192
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9630038B20, eIF5AII
Expression	Broad expression in cerebellum adult (RPKM 10.7), cortex adult (RPKM 6.2) and 15 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

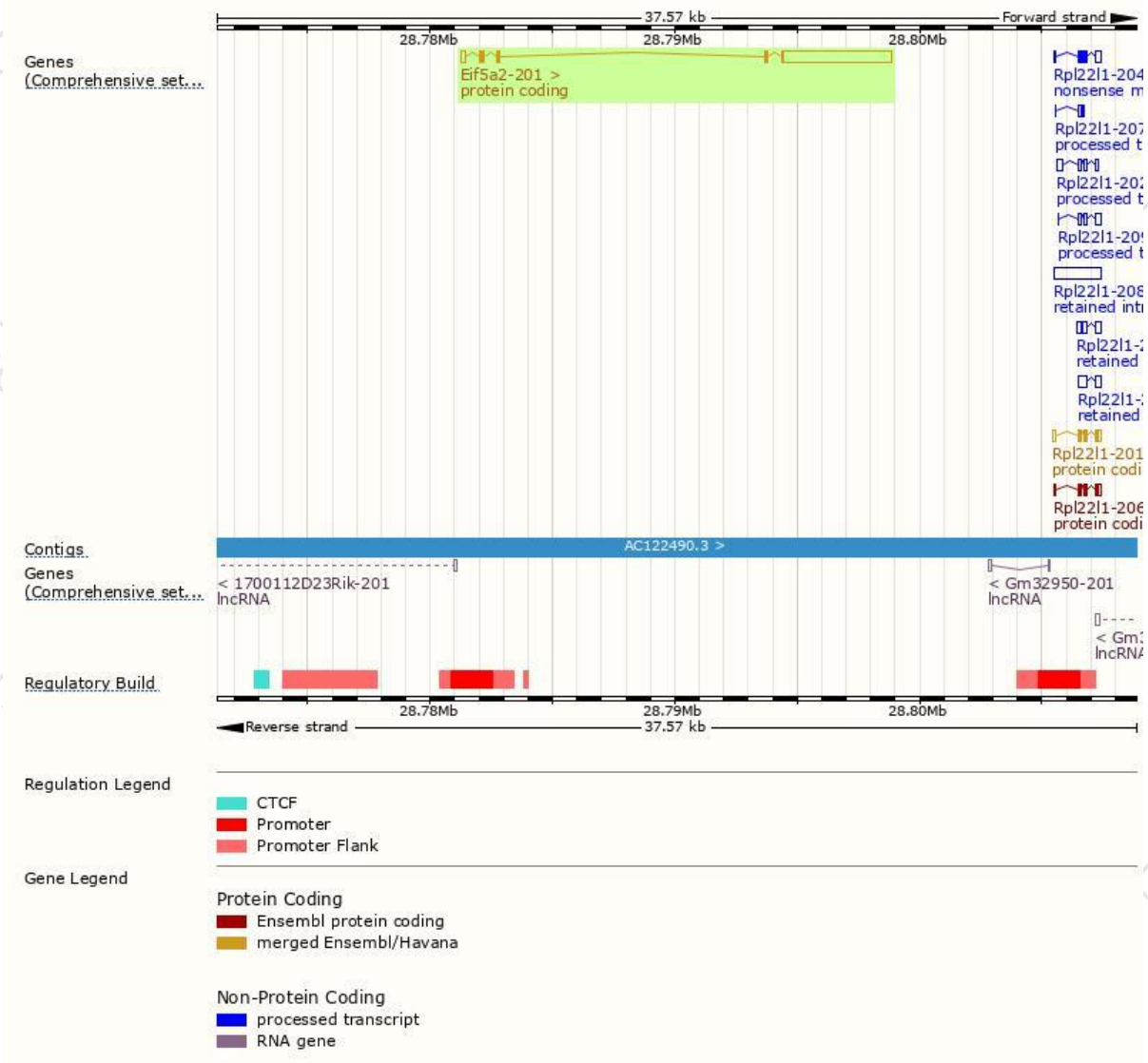
The gene has 1 transcript,and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Eif5a2-201	ENSMUST00000060500.8	5027	153aa	Protein coding	CCDS17277	Q8BGY2	TSL:1 GENCODE basic APPRIS P1

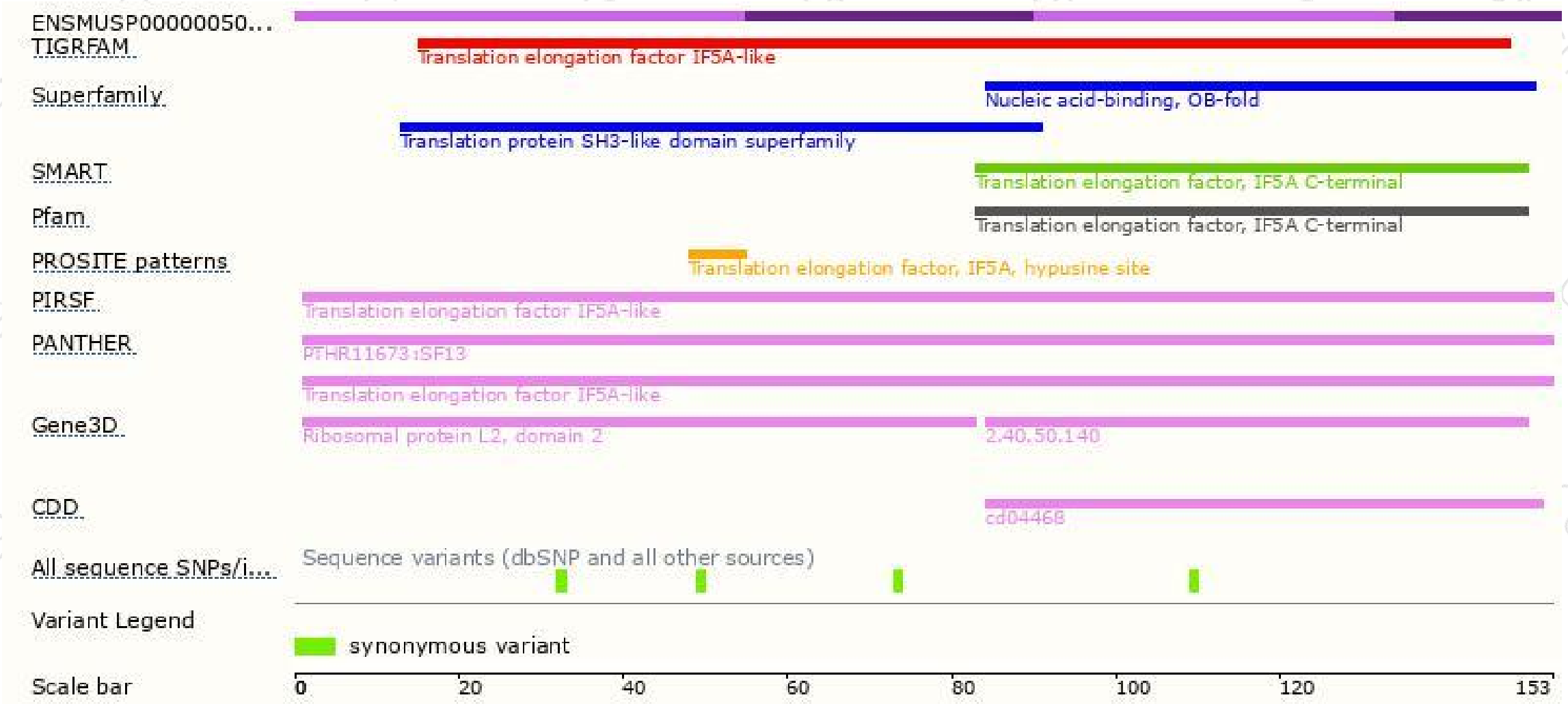
The strategy is based on the design of *Eif5a2-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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