Rgs17 Cas9-KO Strategy

Designer:Xueting Zhang
Reviewer:Yanhua Shen
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Project Overview

Project Name	*Rgs17*
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rgs17* gene. The schematic diagram is as follows:

Technical routes

➢ The *Rgs17* gene has 4 transcripts. According to the structure of *Rgs17* gene, exon3-exon5 of *Rgs17-202*

   (ENSMUST00000064225.13) transcript is recommended as the knockout region.The region contains 469bp coding sequence.

   Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Rgs17* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

➢ The *Rgs17* gene is located on the Chr10. 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）

Rgs17   regulator of G-protein signaling 17 [*Mus musculus* (house mouse)]

Gene ID: 56533, updated on 11-Feb-2020

Summary

Official Symbol	Rgs17 provided by MGI
Official Full Name	regulator of G-protein signaling 17 provided by MGI
Primary source	MGI:MGI:1927469
See related	Ensembl:ENSMUSG00000019775
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	Rgsz2; 6430507P11Rik
Expression	Biased expression in CNS E18 (RPKM 5.0), frontal lobe adult (RPKM 4.8) and 8 other tissues See more
Orthologs	human all

Genomic context

Location: 10; 10 A1

See Rgs17 in Genome Data Viewer

Exon count: 7

| Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	10	NC_000076.6 (5825663..5922412, complement)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	10	NC_000076.5 (4424141..4520878)

Transcript information（Ensembl）

The gene has 4 transcripts,all transcripts are shown below:

| Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rgs17-202	ENSMUST00000064225.13	8191	230aa	Protein coding	CCDS56686	G5E8E0	TSL:1 GENCODE basic
Rgs17-204	ENSMUST00000131996.7	8107	210aa	Protein coding	CCDS56685	Q9QZB0	TSL:1 GENCODE basic APPRIS P1
Rgs17-203	ENSMUST00000117676.7	1651	210aa	Protein coding	CCDS56685	Q9QZB0	TSL:1 GENCODE basic APPRIS P1
Rgs17-201	ENSMUST00000019909.7	831	163aa	Protein coding	-	F8WH97	CDS 3' incomplete TSL:5

The strategy is based on the design of *Rgs17-202* transcript,The transcription is shown below

< Rgs17-202
protein coding

◄─ Reverse strand

96.74 kb
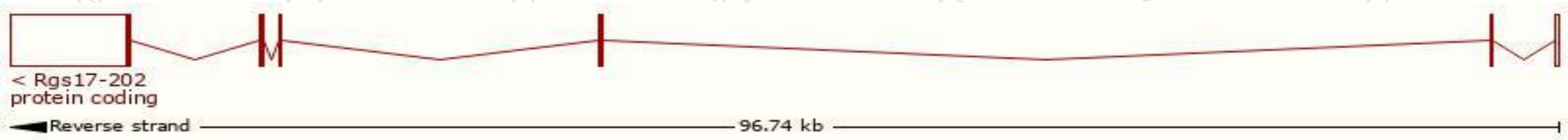
Genomic location distribution
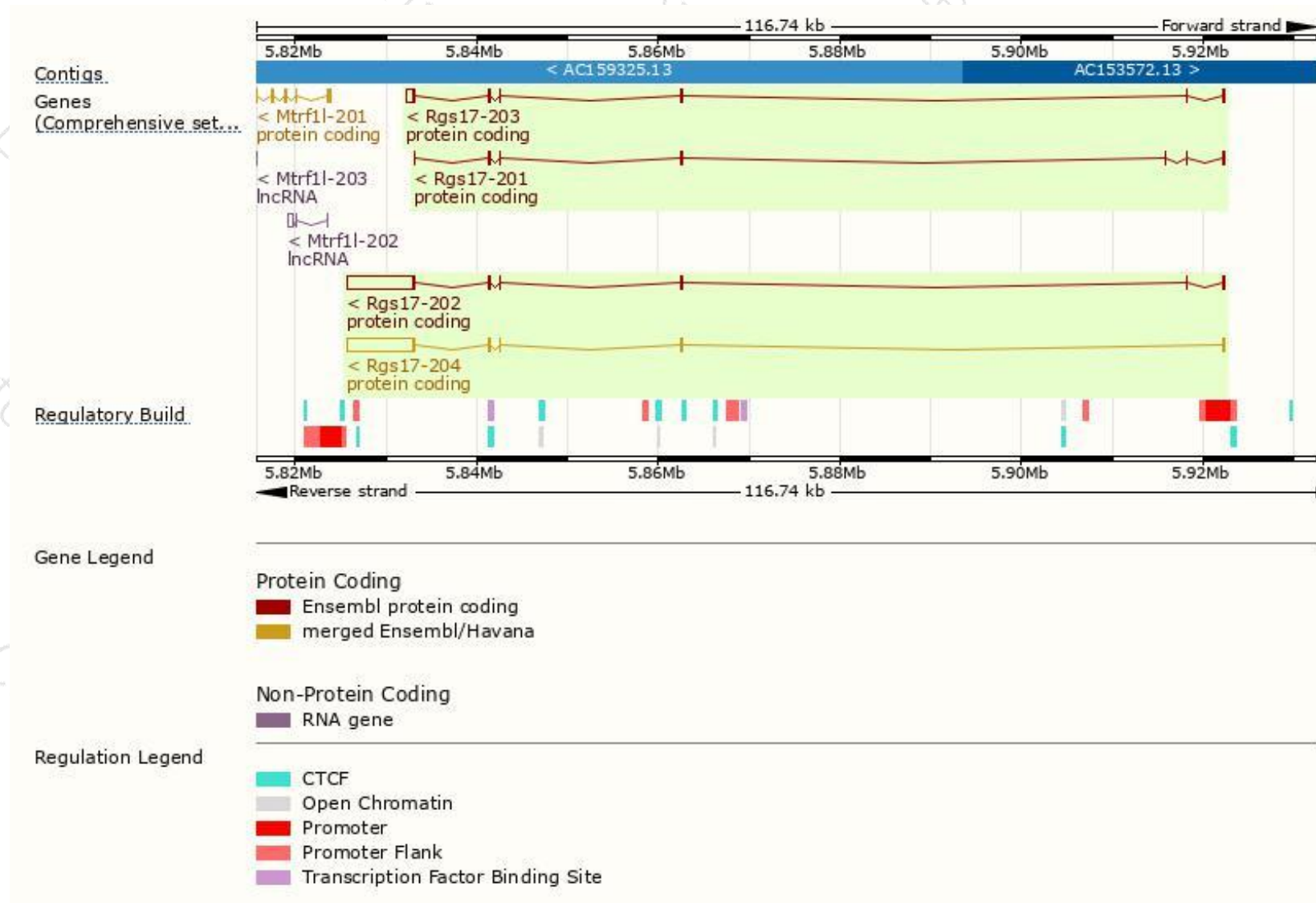
Protein domain
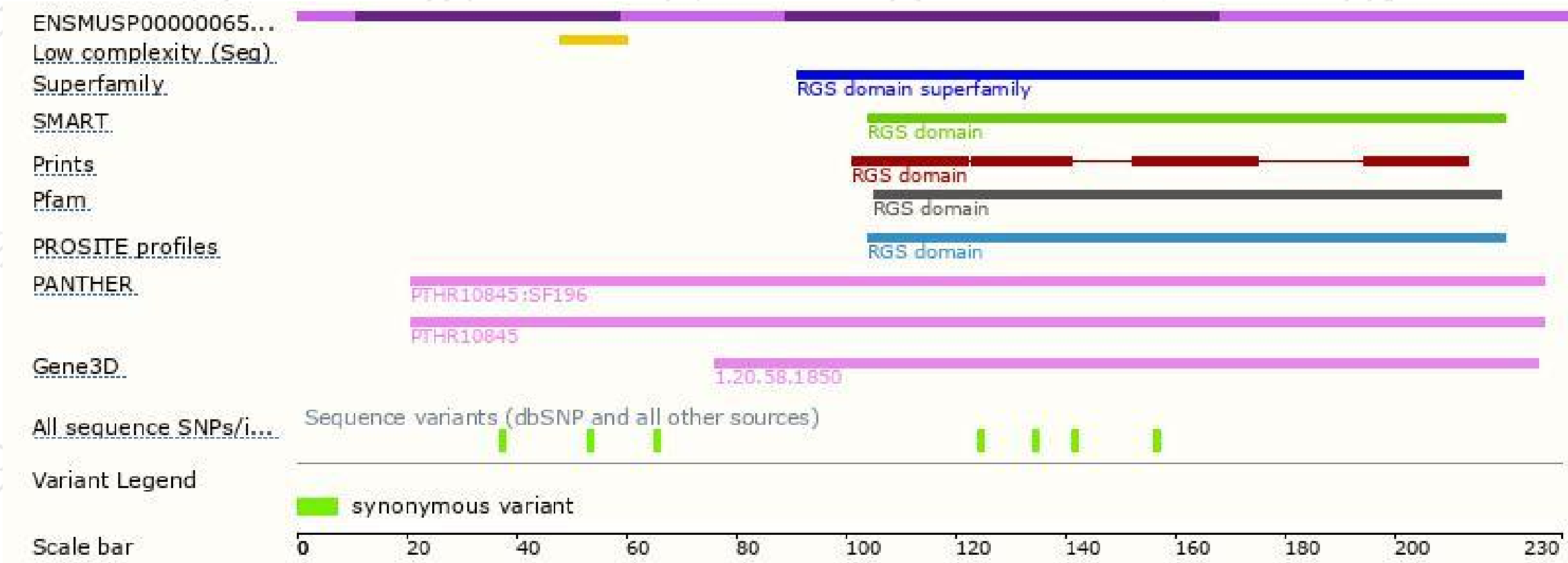
If you have any questions, you are welcome to inquire.
Tel: 400-9660890

集萃药康生物科技
GemPharmatech Co.,Ltd