Pogz Cas9-CKO Strategy

Designer: Huimin Su

Project Overview

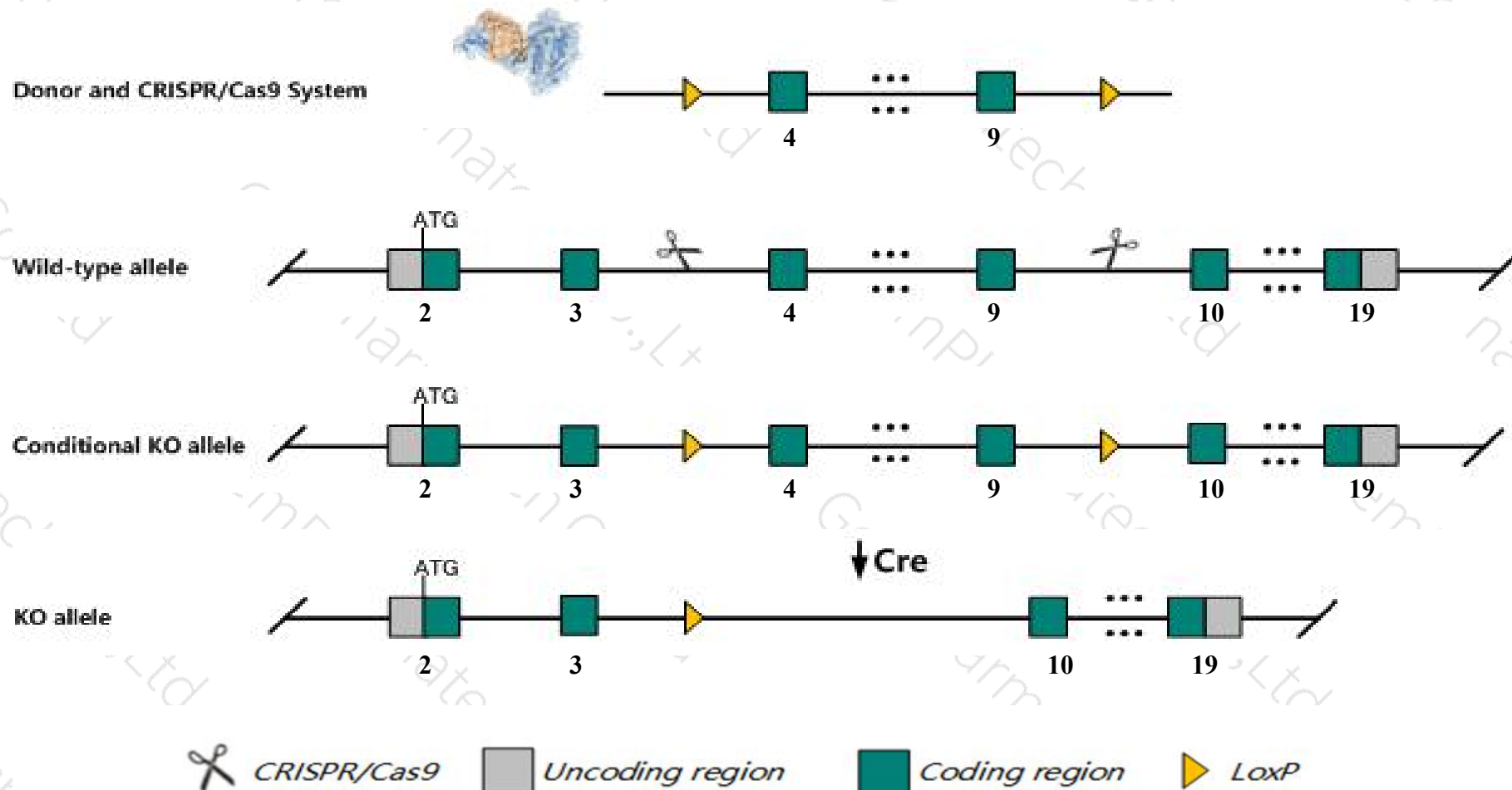|	
Project Name	*Pogz*
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

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

Technical routes

➢ The *Pogz* gene has 10 transcripts. According to the structure of *Pogz* gene, exon4-exon9 of *Pogz-205* (ENSMUST00000107270.8) transcript is recommended as the knockout region.The region contains Ens 1231bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Pogz* gene. The brief process is as follows:CRISPR/Cas9 system and Donor were microinjected into the fertilized eggs of C57BL/6JGpt mice.Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.

➢ The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

➢ The *Pogz* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information （NCBI）

Pogz pogo transposable element with ZNF domain [Mus musculus (house mouse)]

Gene ID: 229584, updated on 2-Apr-2019

▲ Summary

|	
Official Symbol	Pogz provided by MGI
Official Full Name	pogo transposable element with ZNF domain provided by MGI
Primary source	MGI:MGI:2442117
See related	Ensembl:ENSMUSG00000038902
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	9530006B08Rik
Expression	Ubiquitous expression in whole brain E14.5 (RPKM 13.7), CNS E14 (RPKM 13.7) and 28 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

The gene has 10 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pogz-205	ENSMUST00000107270.8	6399	1409aa	Protein coding	CCDS17596	B9EIG6 Q8BZH4	TSL:1 GENCODE basic APPRIS P3
Pogz-201	ENSMUST00000042402.11	4775	1400aa	Protein coding	CCDS50985	Q0VGT3	TSL:1 GENCODE basic APPRIS ALT2
Pogz-204	ENSMUST00000107269.1	5966	1314aa	Protein coding	-	D3YUW8	TSL:5 GENCODE basic
Pogz-203	ENSMUST00000107266.7	4100	1356aa	Protein coding	-	D3YUX1	TSL:5 GENCODE basic APPRIS ALT2
Pogz-209	ENSMUST00000140397.1	517	54aa	Nonsense mediated decay	-	F7D0L1	CDS 5' incomplete TSL:5
Pogz-202	ENSMUST00000107265.7	742	No protein	Processed transcript	-	-	TSL:3
Pogz-206	ENSMUST00000125638.1	279	No protein	Processed transcript	-	-	TSL:5
Pogz-207	ENSMUST00000126235.7	2933	No protein	Retained intron	-	-	TSL:1
Pogz-210	ENSMUST00000142253.1	777	No protein	Retained intron	-	-	TSL:2
Pogz-208	ENSMUST00000132544.1	744	No protein	Retained intron	-	-	TSL:3

The strategy is based on the design of *Pogz-205* transcript,The transcription is shown below
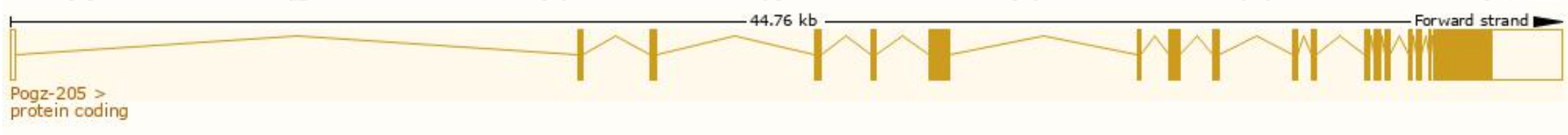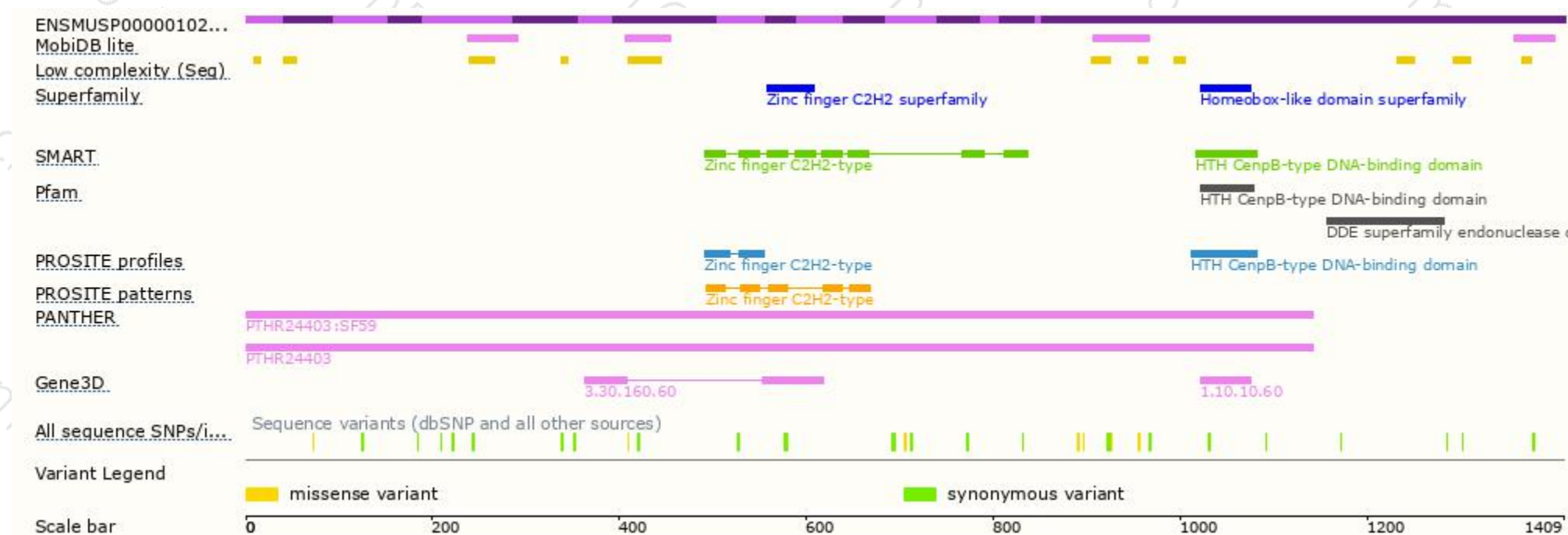
Genomic location distribution
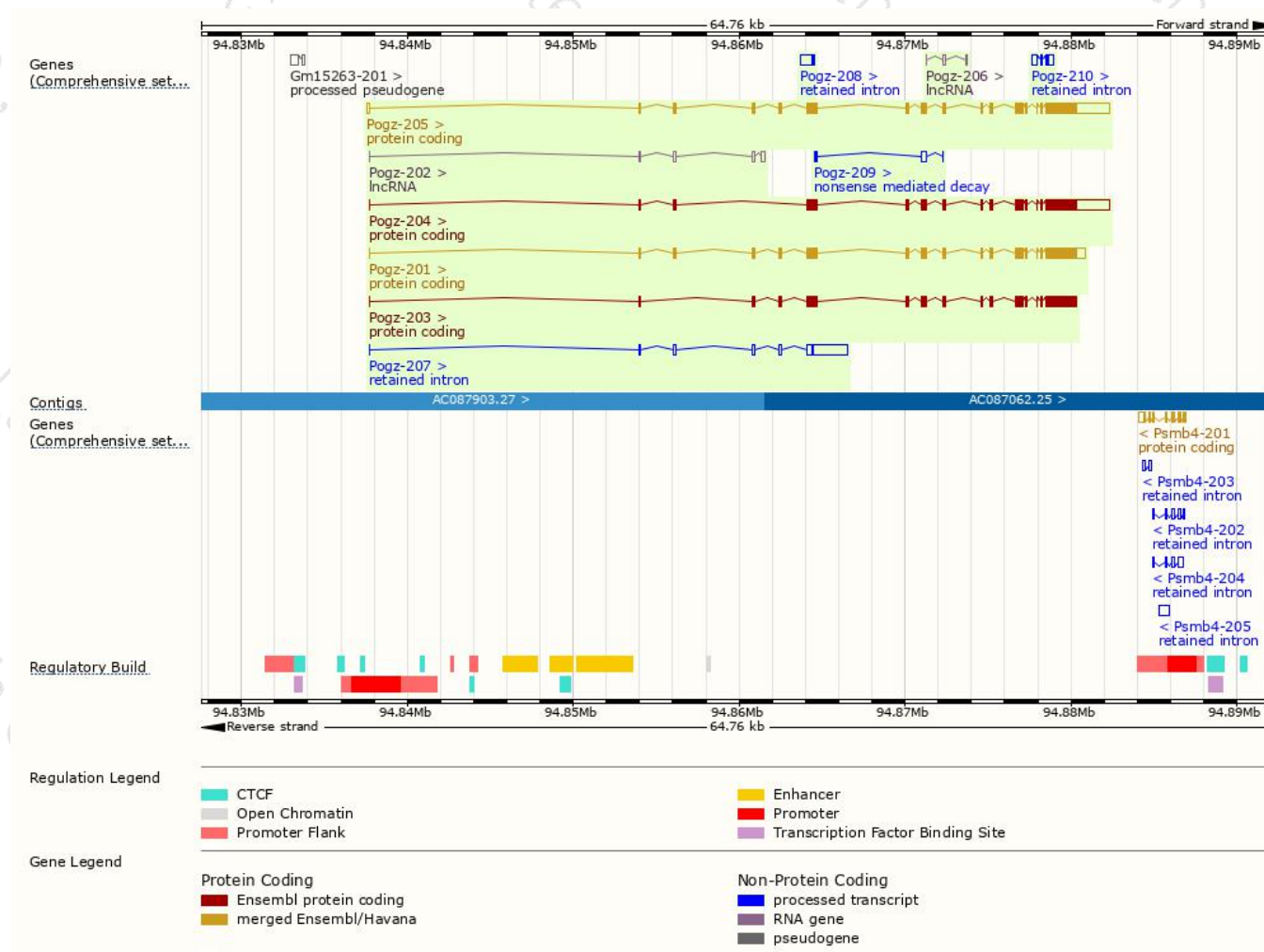
Protein domain

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

集萃药康生物科技
GemPharmatech Co.,Ltd