Jade2 Cas9-CKO Strategy

Designer: Yanhua Shen
Reviewer：Xueting Zhang
Design Date: 2020-2-4

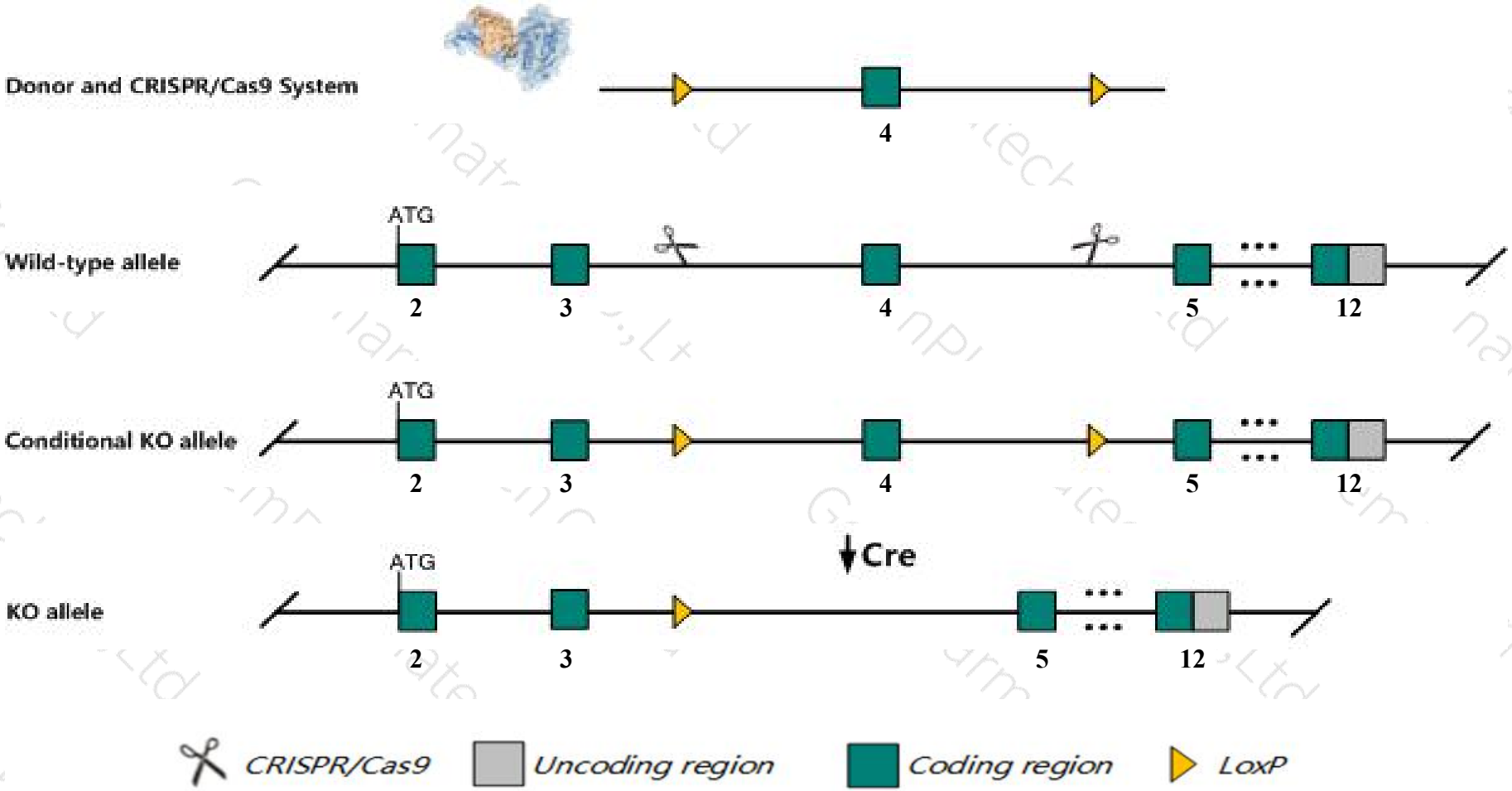
GemPharmatech Co.,Ltd

Project Overview

Project Name	***Jade2***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Jade2* gene. The schematic diagram is as follows:



Technical routes

- The *Jade2* gene has 4 transcripts. According to the structure of *Jade2* gene, exon4 of *Jade2-201* (ENSMUST00000020655.13) transcript is recommended as the knockout region.The region contains 158bp coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Jade2* 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

➢Transcript 204 may not be affected.

➢The *Jade2* gene is located on the Chr11. 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）

集萃药康 GemPharmatech

Jade2 jade family PHD finger 2 [*Mus musculus* (house mouse)]

Gene ID: 76901, updated on 12-Aug-2019

Summary

Official Symbol	Jade2 provided by MGI
Official Full Name	jade family PHD finger 2 provided by MGI
Primary source	MGI:MGI:1924151
See related	Ensembl:ENSMUSG00000020387
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	Phf15; AI480685; mKIAA0239; 1200017K05Rik
Expression	Broad expression in thymus adult (RPKM 14.2), lung adult (RPKM 11.2) and 20 other tissues See more
Orthologs	human all

Genomic context

Location: 11; 11 B1.3

See Jade2 in Genome Data Viewer

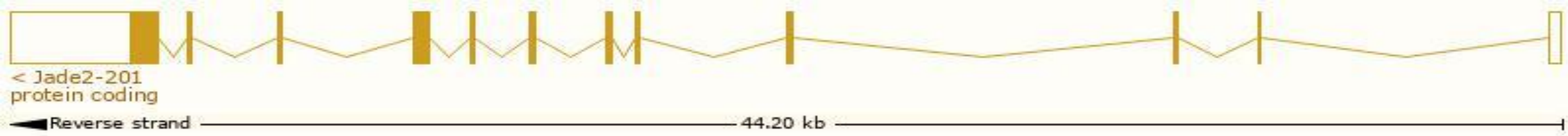
Exon count: 17

Transcript information（Ensembl）

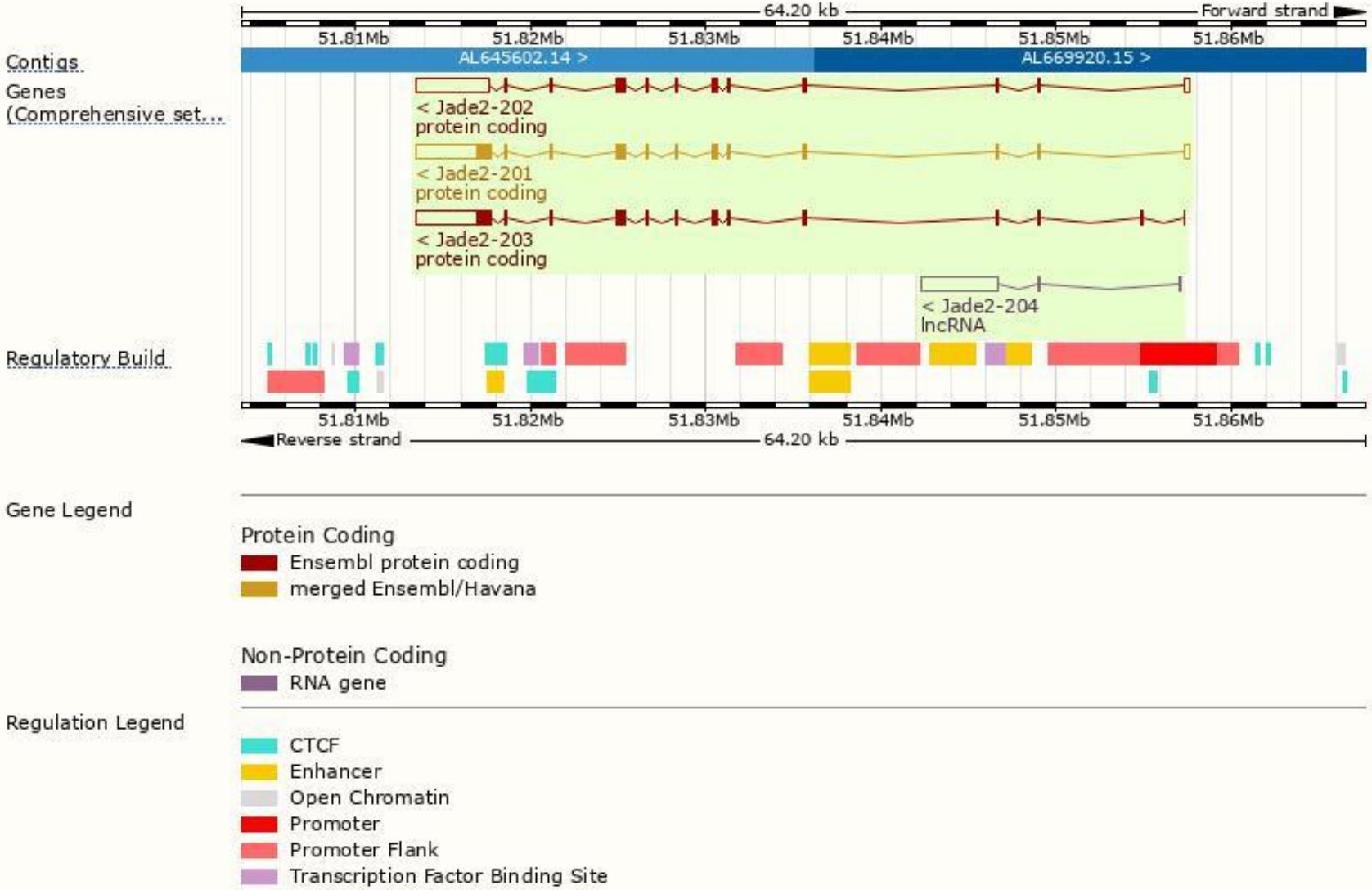
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Jade2-201	ENSMUST00000020655.13	6273	829aa	Protein coding	CCDS24662	Q6ZQF7	TSL:1 GENCODE basic APPRIS P2
Jade2-203	ENSMUST00000109091.1	6099	829aa	Protein coding	CCDS24662	Q6ZQF7	TSL:1 GENCODE basic APPRIS P2
Jade2-202	ENSMUST00000109090.7	6230	576aa	Protein coding	-	A2AA59	TSL:1 GENCODE basic APPRIS ALT2
Jade2-204	ENSMUST00000151277.1	4552	No protein	lncRNA	-	-	TSL:1

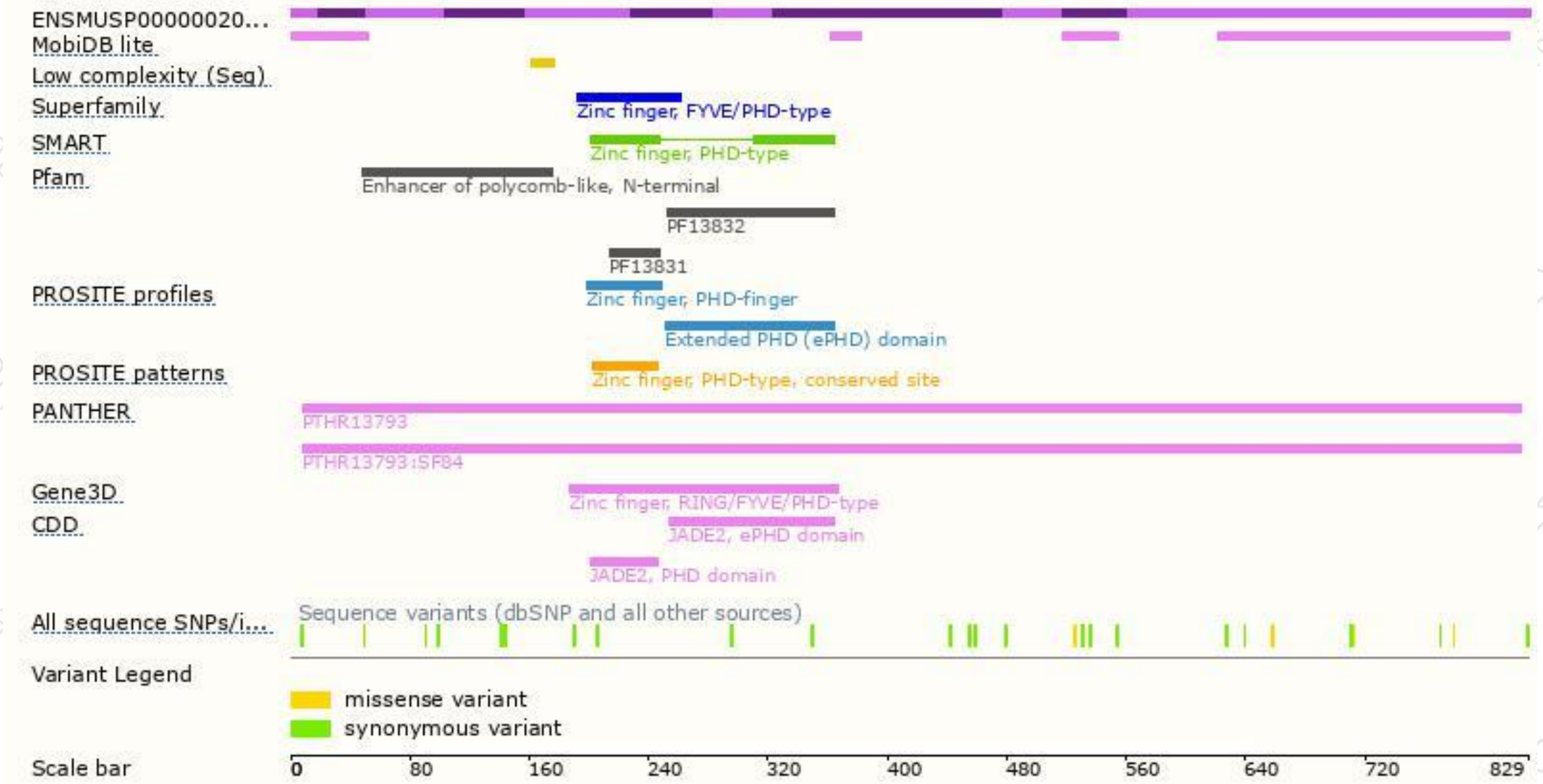
The strategy is based on the design of *Jade2-201* transcript,The transcription is shown below



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

GemPharmatech Co.,Ltd