Jade3 Cas9-KO Strategy

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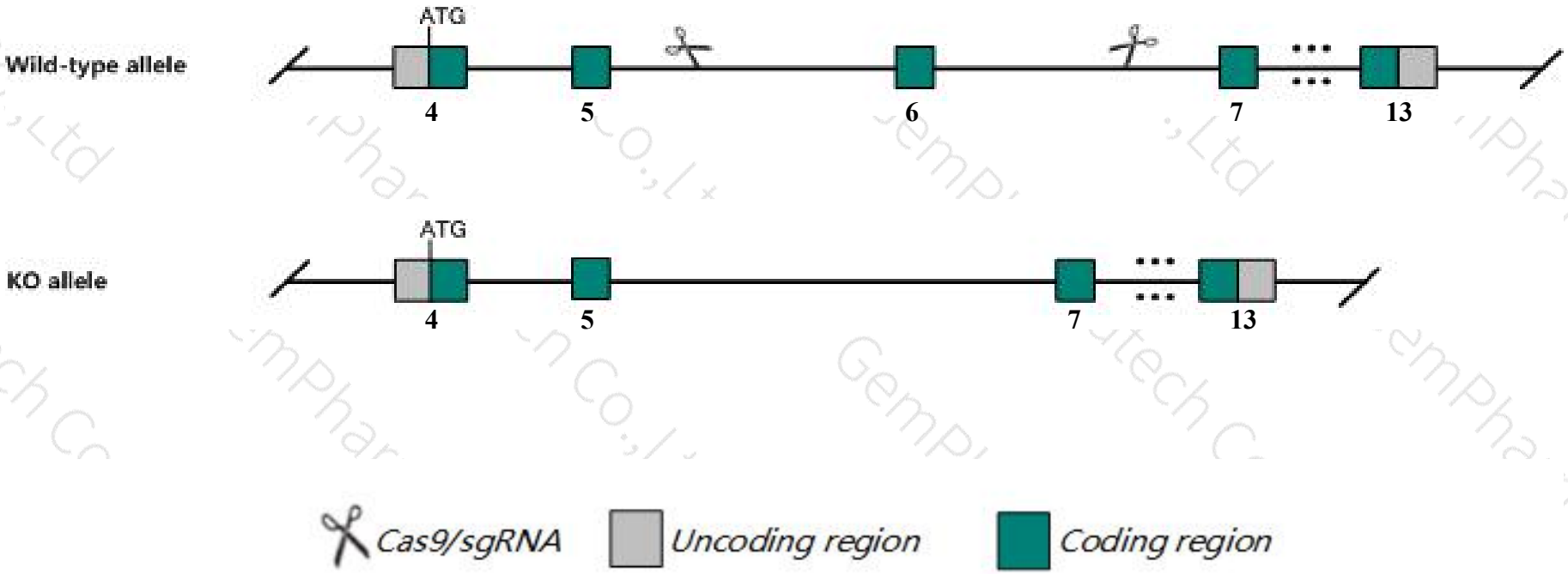
Project Overview

Project Name	***Jade3***
Project type	**Cas9-KO**
Strain background	**C57BL/6J**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Jade3* gene. The schematic diagram is as follows:



Technical routes

➢ The *Jade3* gene has 4 transcripts. According to the structure of *Jade3* gene, exon6 of *Jade3-202* (ENSMUST00000115384.8) 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 *Jade3* gene. The brief process is as follows: sgRNA was transcribed in vitro.Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6J 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/6J mice.

Notice

- According to the existing MGI data,Male chimeras hemizygous for a gene trapped allele appear normal at E9.5.

- The *Jade3* gene is located on the ChrX. 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）

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Jade3 jade family PHD finger 3 [Mus musculus (house mouse)]

Gene ID: 382207, updated on 31-Jan-2019

Summary

Official Symbol	Jade3 provided by MGI
Official Full Name	jade family PHD finger 3 provided byMGI
Primary source	MGI:MGI:2148019
See related	Ensembl:ENSMUSG00000037315
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	5730598B06, AI851988, AW544806, Phf16, mKIAA0215
Expression	Biased expression in placenta adult (RPKM 22.3), CNS E18 (RPKM 3.8) and 11 other tissuesSee more
Orthologs	human all

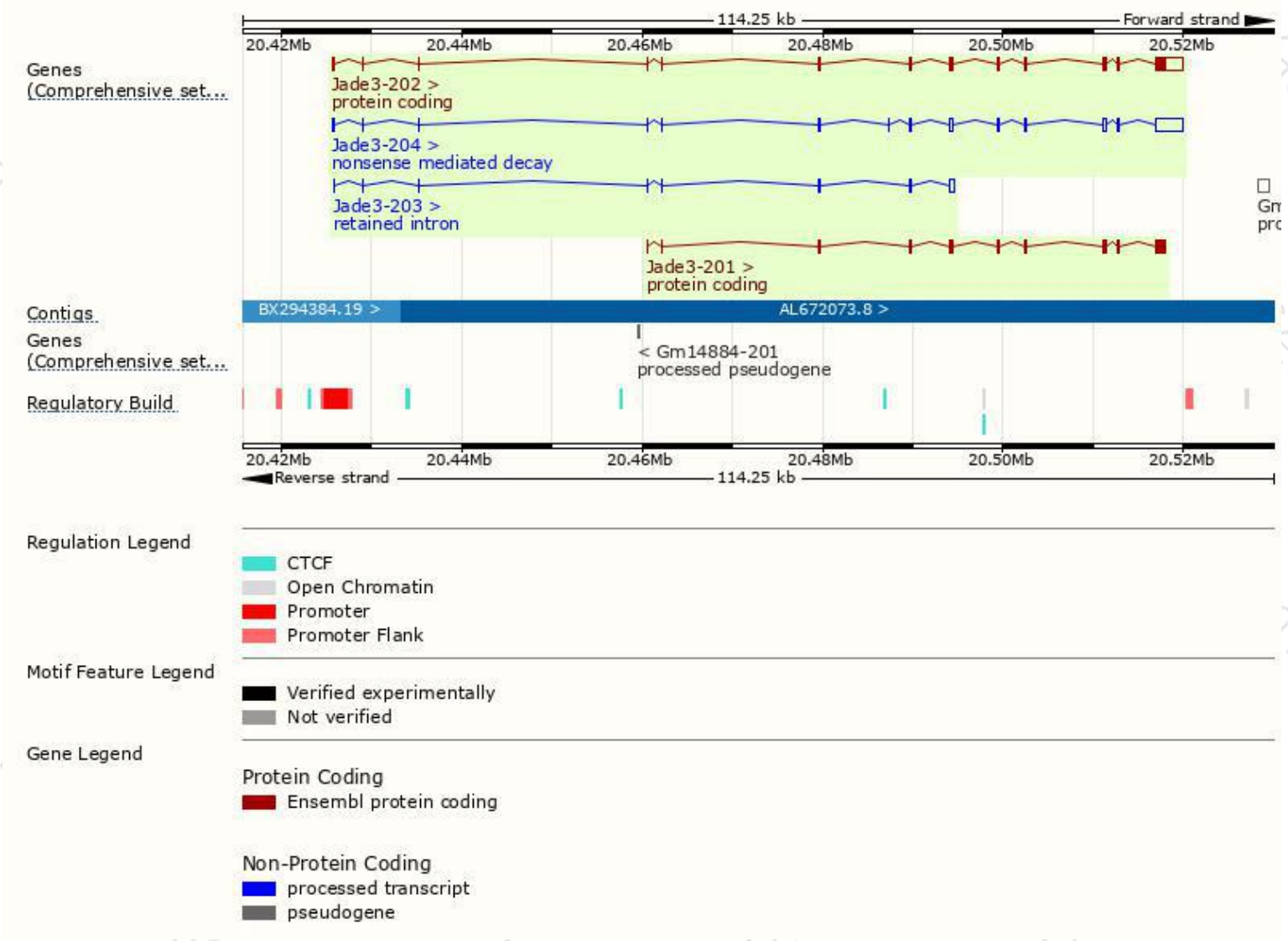
Transcript information（Ensembl）

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

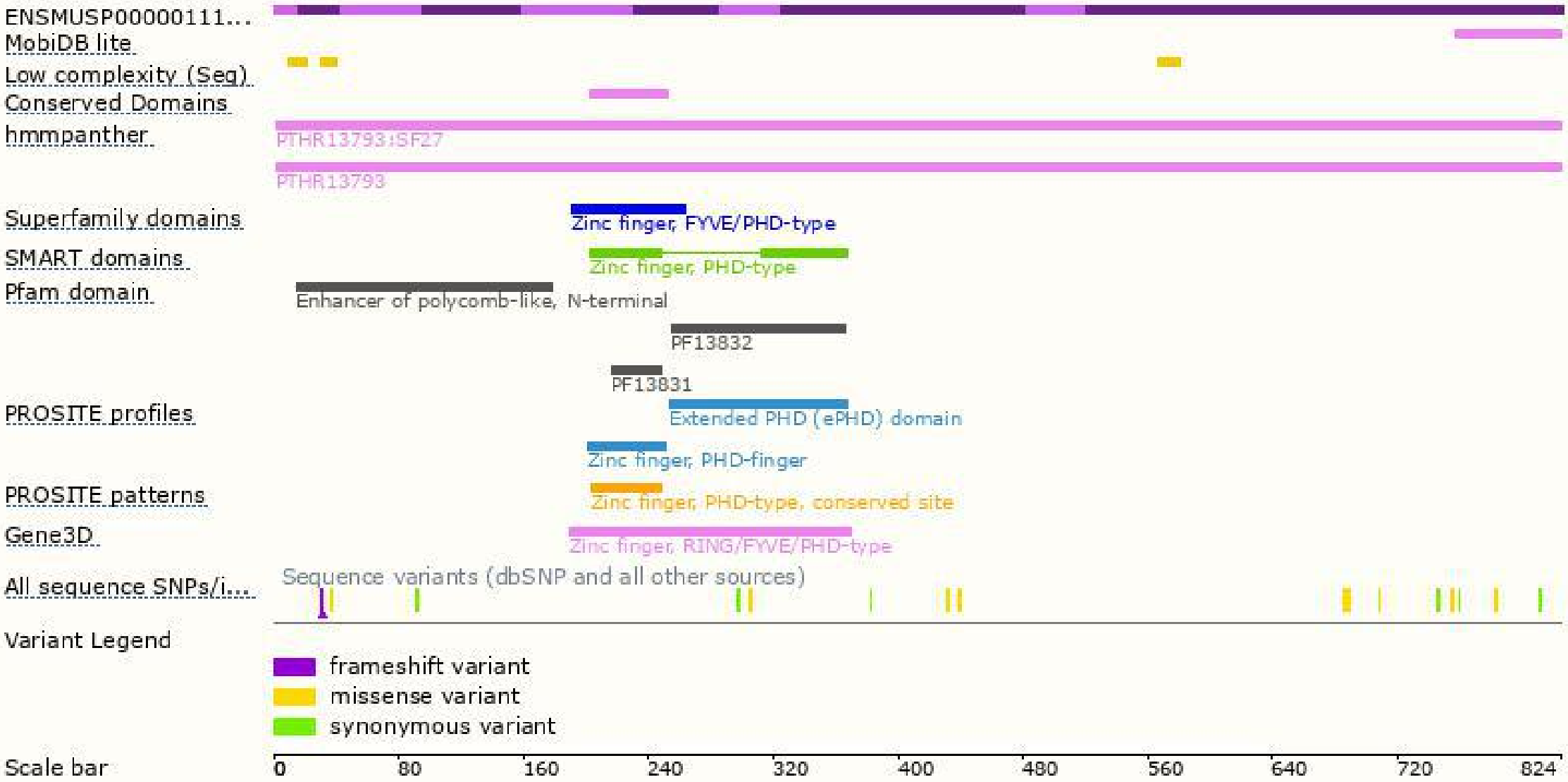
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Jade3-202	ENSMUST00000115384.8	4866	824aa	Protein coding	CCDS30042	A0A140T8R5	TSL:1 GENCODE basic APPRIS P2
Jade3-201	ENSMUST00000043693.6	2472	823aa	Protein coding	-	Q6IE82	TSL:1 GENCODE basic APPRIS ALT2
Jade3-204	ENSMUST00000224892.1	4962	122aa	Nonsense mediated decay	-	A0A286YCK1	
Jade3-203	ENSMUST00000136093.1	1156	No protein	Retained intron	-	-	TSL:2

The strategy is based on the design of *Jade3-202* transcript,The transcription is shown below

Genomic location distribution



Protein domain



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

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