

Zfp64 Cas9-KO Strategy

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Project Overview



Project Name

Zfp64

Project type

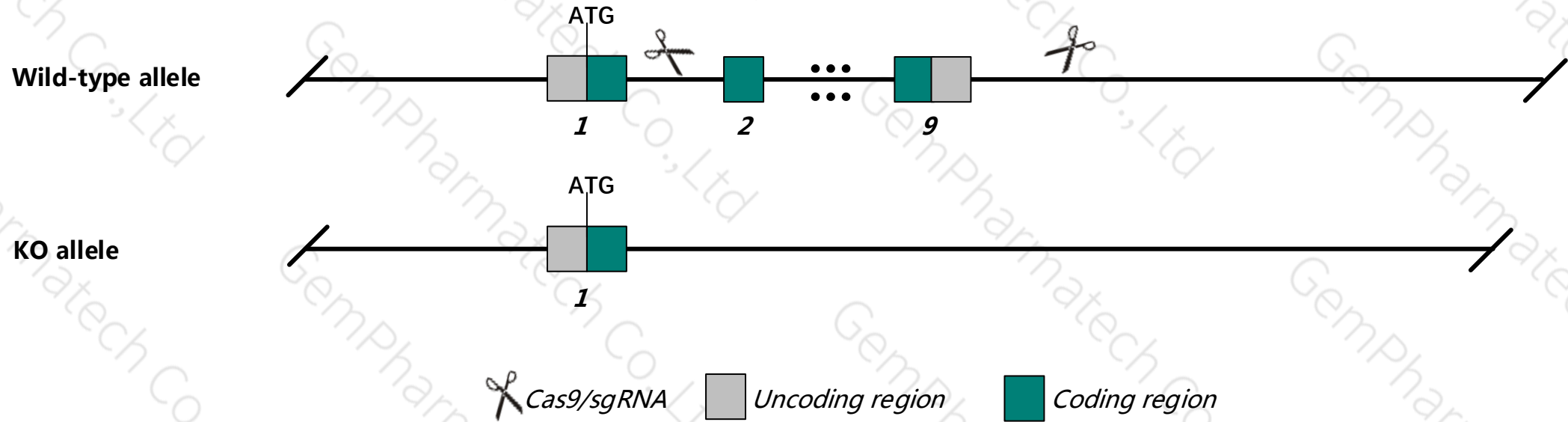
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zfp64* gene. The schematic diagram is as follows:



Technical routes

- The *Zfp64* gene has 5 transcripts. According to the structure of *Zfp64* gene, exon2-exon9 of *Zfp64*-203 (ENSMUST00000109162.8) transcript is recommended as the knockout region. The region contains most of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zfp64* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9, sgRNA 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 *Zfp64* gene is located on the Chr2. 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)

Zfp64 zinc finger protein 64 [*Mus musculus* (house mouse)]

Gene ID: 22722, updated on 13-Mar-2020

Summary

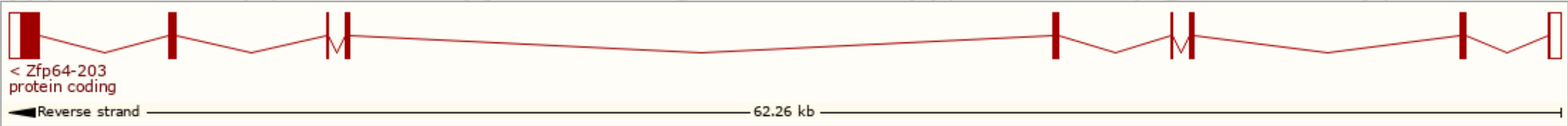
Official Symbol	Zfp64 provided by MGI
Official Full Name	zinc finger protein 64 provided by MGI
Primary source	MGI:MGI:107342
See related	Ensembl:ENSMUSG00000027551
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Gm38422
Expression	Ubiquitous expression in thymus adult (RPKM 17.9), ovary adult (RPKM 14.6) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

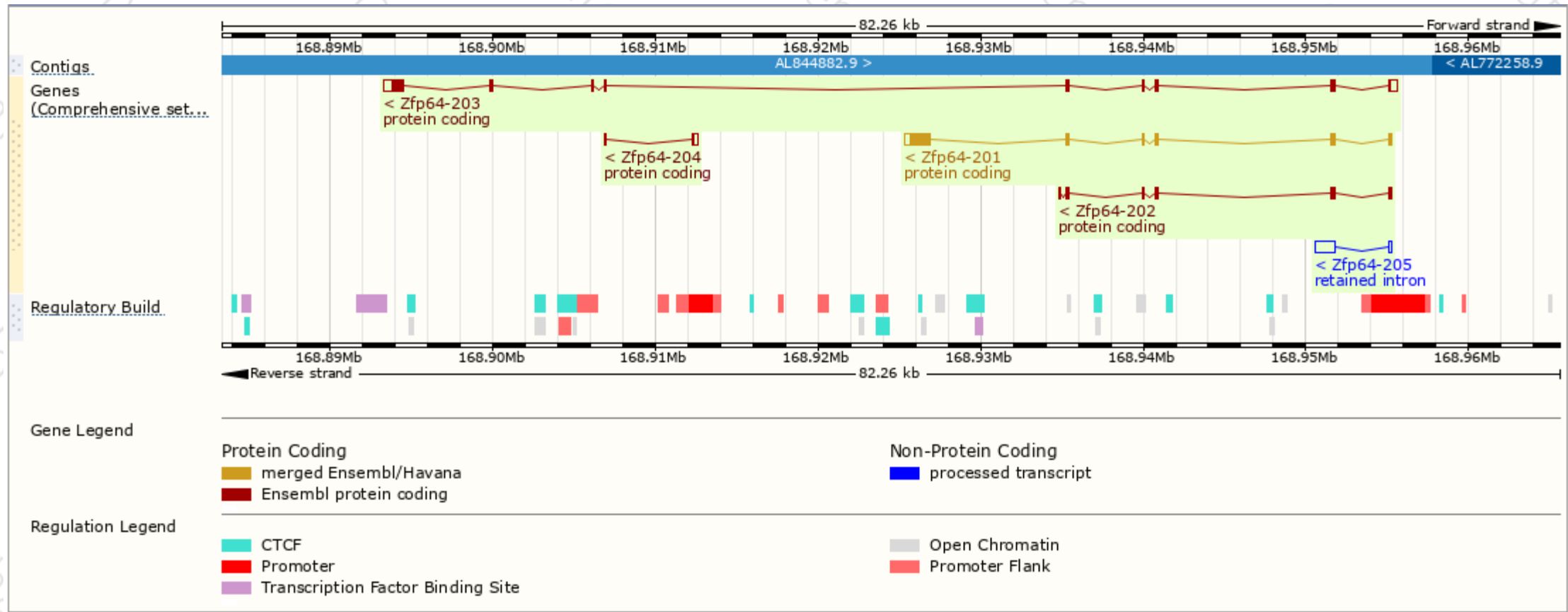
The gene has 5 transcripts, and all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zfp64-201	ENSMUST00000087971.10	2438	676aa	Protein coding	CCDS50804	A2AQR4	TSL:1 GENCODE basic
Zfp64-203	ENSMUST00000109162.8	2848	643aa	Protein coding	-	A2AQR3	TSL:2 GENCODE basic APPRIS P1
Zfp64-202	ENSMUST00000109161.2	1009	272aa	Protein coding	-	Q99KE8	TSL:1 GENCODE basic
Zfp64-204	ENSMUST00000124599.1	548	84aa	Protein coding	-	A2AQR2	CDS 3' incomplete TSL:5
Zfp64-205	ENSMUST00000136242.1	1352	No protein	Retained intron	-	-	TSL:1

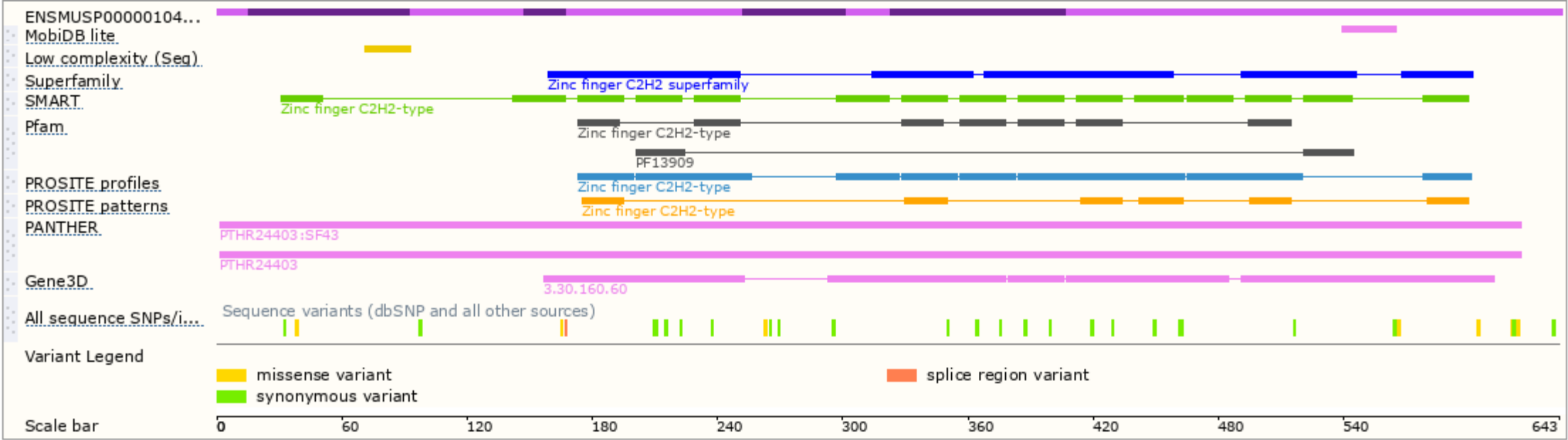
The strategy is based on the design of *Zfp64-203* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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