Vsig10l Cas9-KO Strategy

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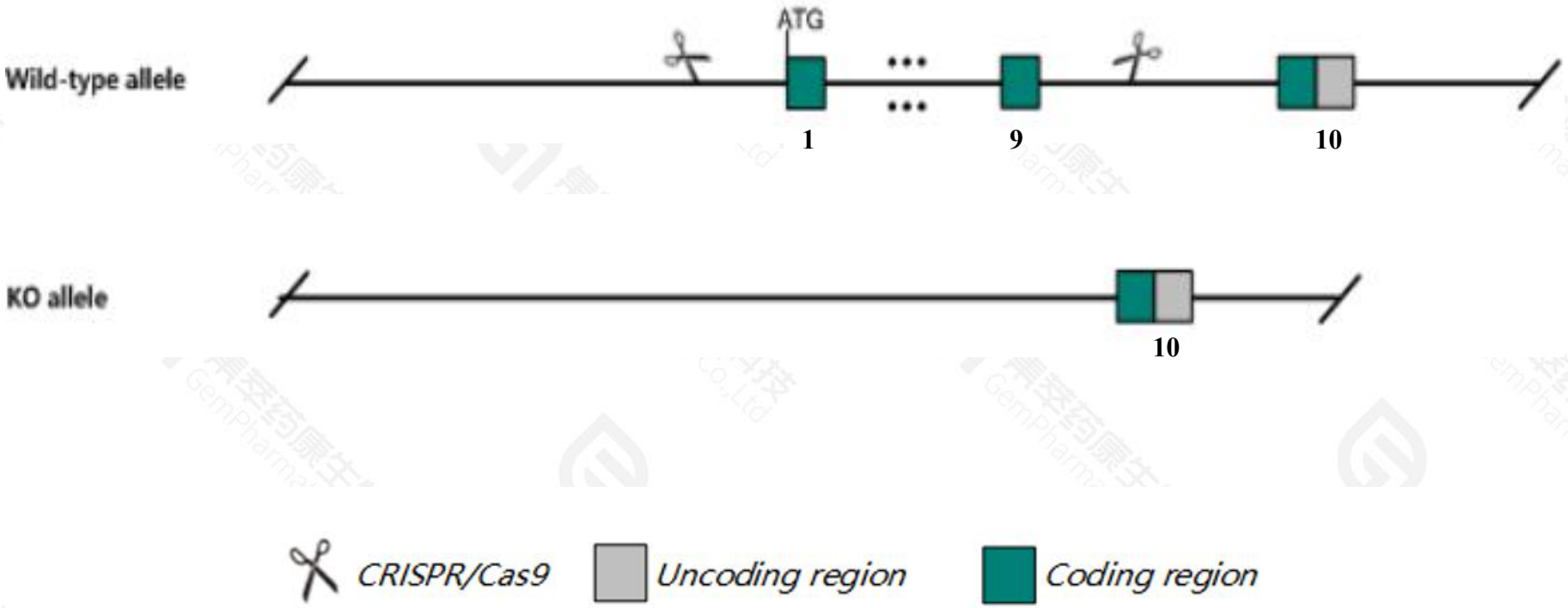
Project Overview

Project Name	***Vsig10l***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Vsig10l* gene. The schematic diagram is as follows:



Technical routes

➢ The *Vsig10l* gene has 5 transcripts. According to the structure of *Vsig10l* gene, exon1-exon9 of *Vsig10l-204*(ENSMUST00000203769.1) transcript is recommended as the knockout region.The region contains start codon ATG.Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Vsig10l* gene. The brief process is as follows: CRISPR/Cas9 system 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.

Notice

➢ The *Vsig10l* gene is located on the Chr7. 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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Vsig10l V-set and immunoglobulin domain containing 10 like [Mus musculus (house mouse)]

Gene ID: 75690, updated on 25-Sep-2020

Summary

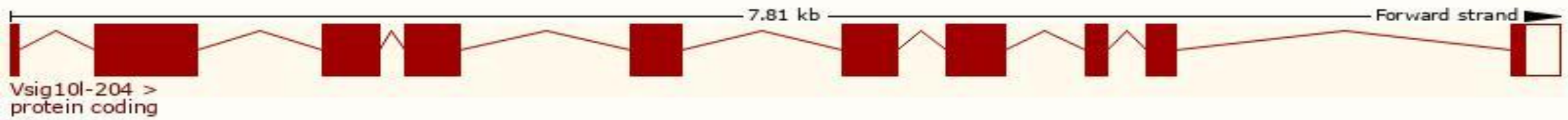
Official Symbol	Vsig10l provided by MGI
Official Full Name	V-set and immunoglobulin domain containing 10 like provided byMGI
Primary source	MGI:MGI:1922940
See related	Ensembl:ENSMUSG00000070604
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Expression	Broad expression in stomach adult (RPKM 12.0), testis adult (RPKM 4.2) and 22 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

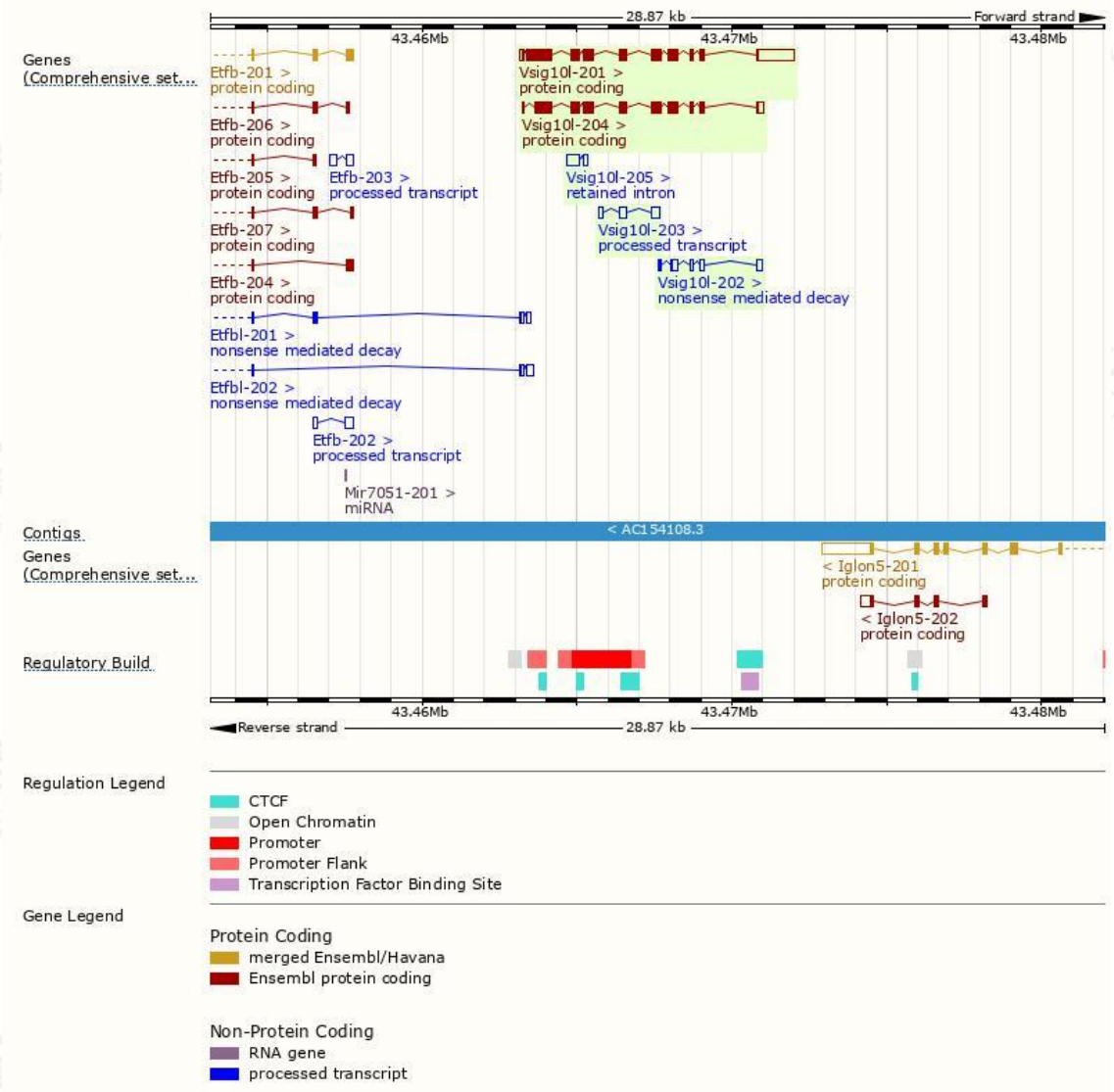
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Vsig10l-204	ENSMUST00000203769.1	2473	766aa	Protein coding	CCDS85281	A0A0N4SUI1	TSL:1 GENCODE basic APPRIS P2
Vsig10l-201	ENSMUST00000107977.3	3836	868aa	Protein coding	-	D3YZF7	TSL:5 GENCODE basic APPRIS ALT2
Vsig10l-202	ENSMUST00000203042.1	755	34aa	Nonsense mediated decay	-	A0A0N4SW54	CDS 5' incomplete TSL:3
Vsig10l-203	ENSMUST00000203152.1	617	No protein	Processed transcript	-	-	TSL:5
Vsig10l-205	ENSMUST00000205247.1	536	No protein	Retained intron	-	-	TSL:2

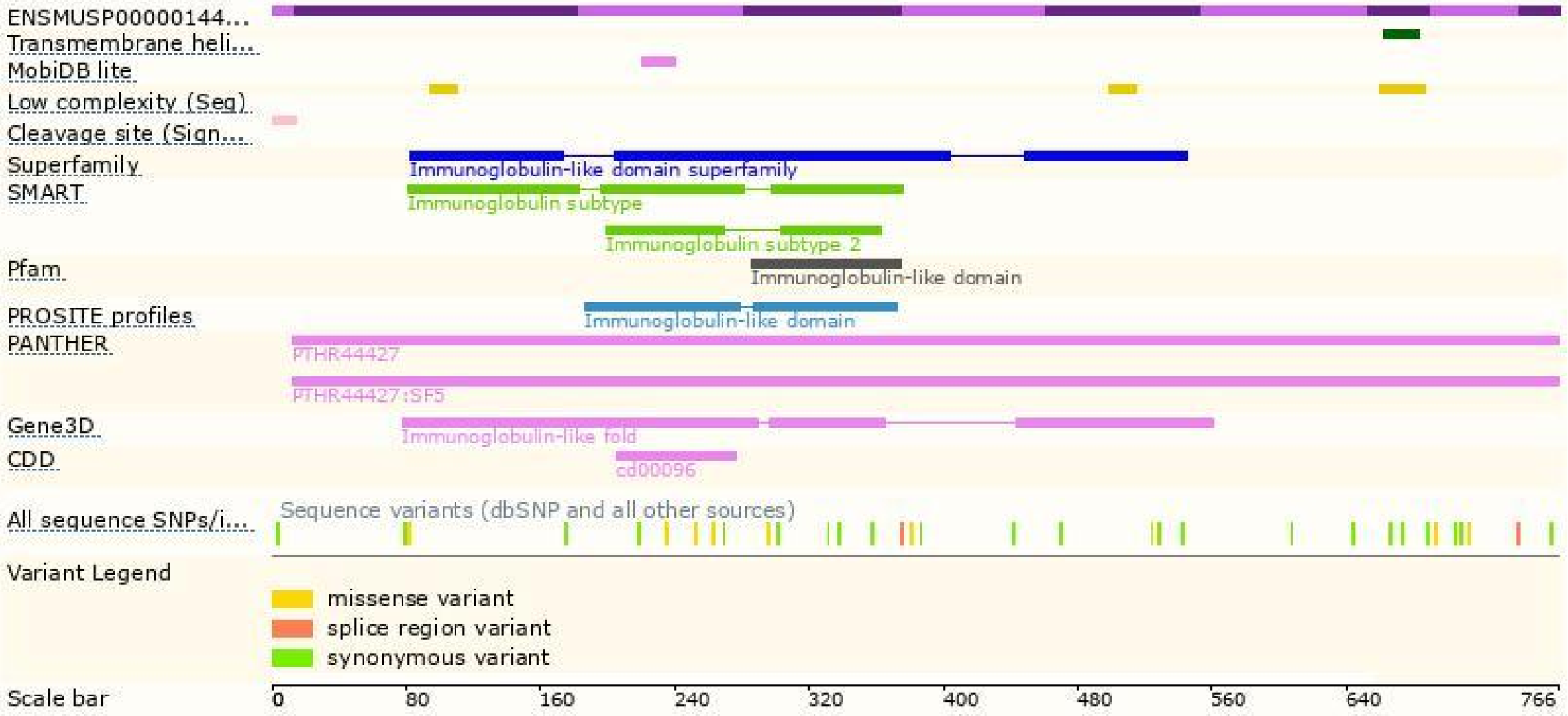
The strategy is based on the design of *Vsig10l-204* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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