Slfn5 Cas9-KO Strategy

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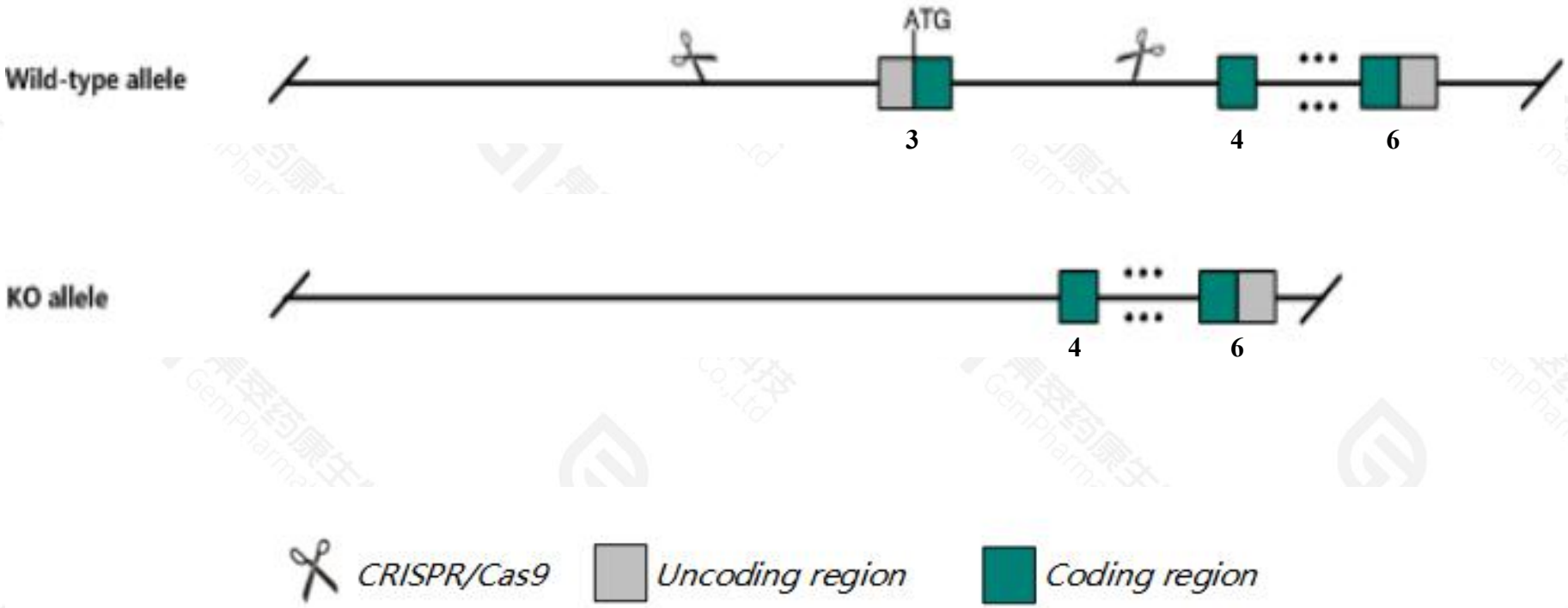
Project Overview

Project Name	***Slfn5***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slfn5* gene. The schematic diagram is as follows:



Technical routes

➢ The *Slfn5* gene has 4 transcripts. According to the structure of *Slfn5* gene, exon3 of *Slfn5-201*(ENSMUST00000067443.10) 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 *Slfn5* 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 KO region contains functional region of the Slfn5 gene.Knockout the region may affect the function of Slfn5os gene.

➢ The *Slfn5* 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 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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Slfn5 schlafen 5 [Mus musculus (house mouse)]

Gene ID: 327978, updated on 3-Oct-2020

Summary

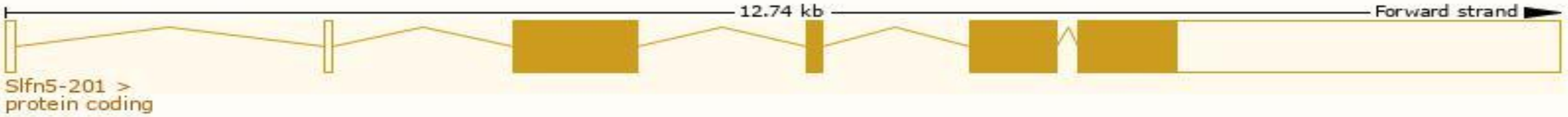
Official Symbol	Slfn5 provided by MGI
Official Full Name	schlafen 5 provided byMGI
Primary source	MGI:MGI:1329004
See related	Ensembl:ENSMUSG00000054404
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AI956840
Expression	Broad expression in subcutaneous fat pad adult (RPKM 9.0), heart adult (RPKM 7.4) and 19 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

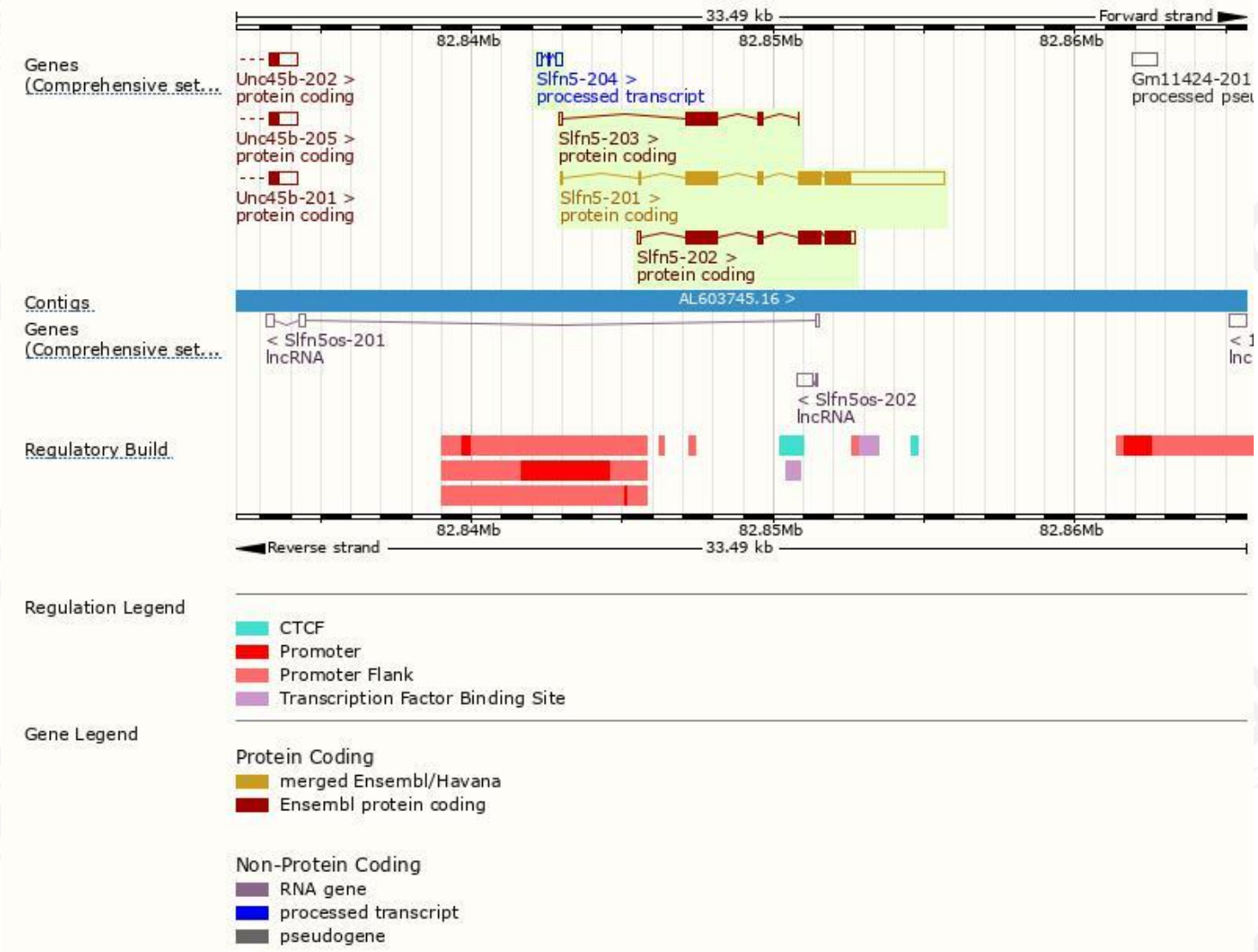
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slfn5-201	ENSMUST00000067443.10	5979	884aa	Protein coding	CCDS25153		TSL:1 , GENCODE basic , APPRIS P1 ,
Slfn5-202	ENSMUST00000108157.2	3007	884aa	Protein coding	CCDS25153		TSL:1 , GENCODE basic , APPRIS P1 ,
Slfn5-203	ENSMUST00000108158.9	1263	378aa	Protein coding	-		CDS 3' incomplete , TSL:5 ,
Slfn5-204	ENSMUST00000150687.2	360	No protein	Processed transcript	-		TSL:3 ,

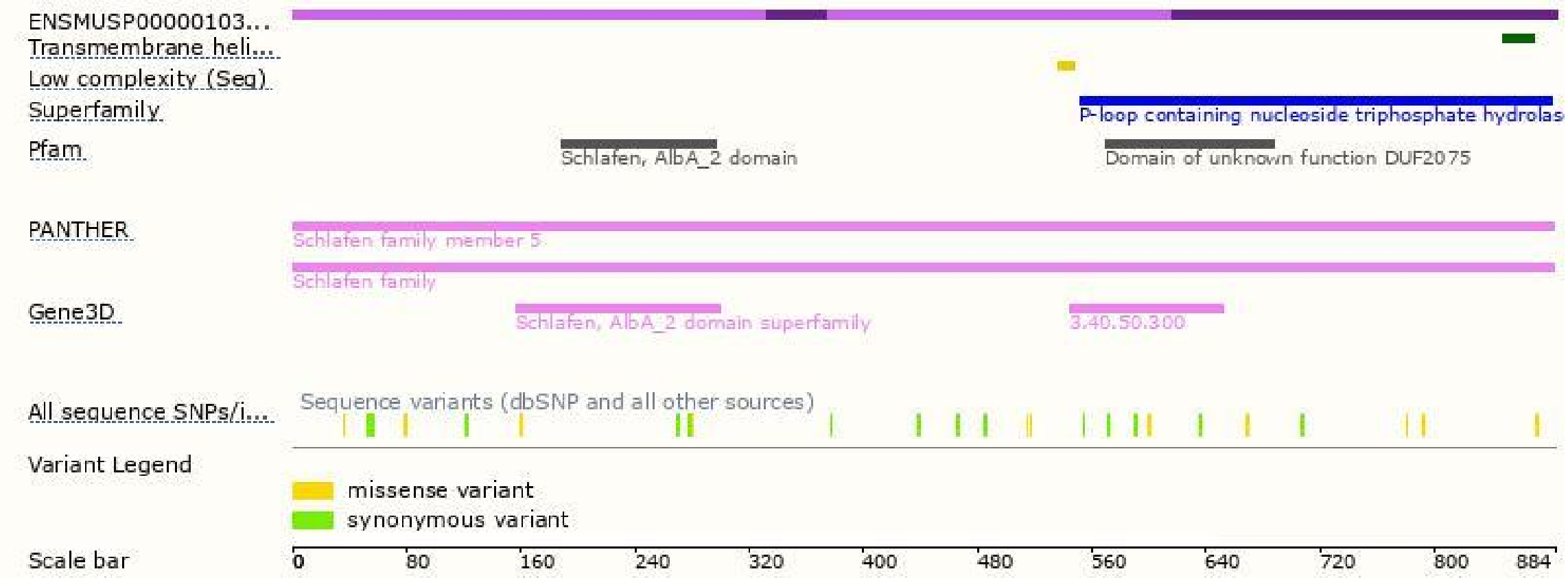
The strategy is based on the design of *Slfn5-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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