

Spg21 Cas9-KO Strategy

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Project Overview

Project Name

Spg21

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Spg21* gene. The schematic diagram is as follows:



- The *Spg21* gene has 4 transcripts. According to the structure of *Spg21* gene, exon3-exon5 of *Spg21-201* (ENSMUST00000034955.7) transcript is recommended as the knockout region. The region contains 389bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Spg21* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Spg21* gene is located on the Chr9. 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.
- Transcript 203 CDS 3' incomplete the influences is unknown.
- 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)

Spg21 SPG21, maspardin [Mus musculus (house mouse)]

Gene ID: 27965, updated on 31-Jan-2019

Summary



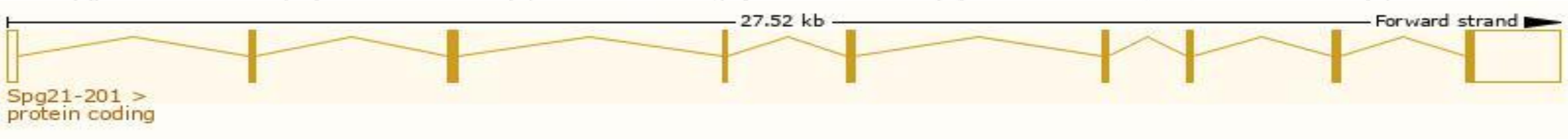
Official Symbol	Spg21 provided by MGI
Official Full Name	SPG21, maspardin provided by MGI
Primary source	MGI:MGI:106403
See related	Ensembl:ENSMUSG000000032388
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	ACP33, BM-019, C78576, D9Wsu18e, GL010, MAST
Expression	Ubiquitous expression in subcutaneous fat pad adult (RPKM 15.5), limb E14.5 (RPKM 15.0) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

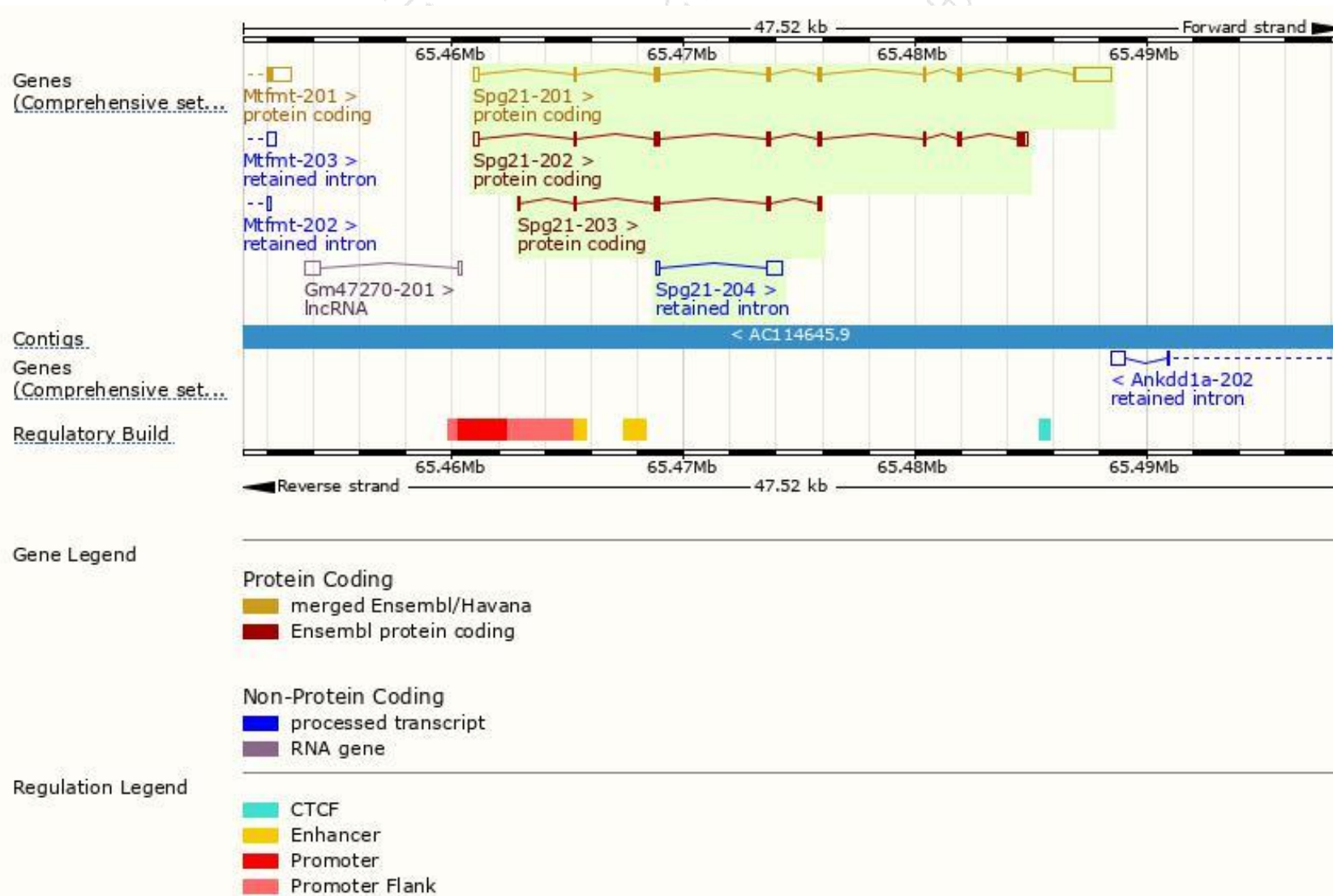
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Spg21-201	ENSMUST00000034955.7	2680	308aa	Protein coding	CCDS23293	A2RT57 Q9CQC8	TSL:1 GENCODE basic APPRIS P1
Spg21-202	ENSMUST00000213957.1	1302	306aa	Protein coding	-	A0A1L1SST5	TSL:1 GENCODE basic
Spg21-203	ENSMUST00000215170.1	484	135aa	Protein coding	-	A0A1L1SSV6	CDS 3' incomplete TSL:2
Spg21-204	ENSMUST00000216992.1	795	No protein	Retained intron	-	-	TSL:3

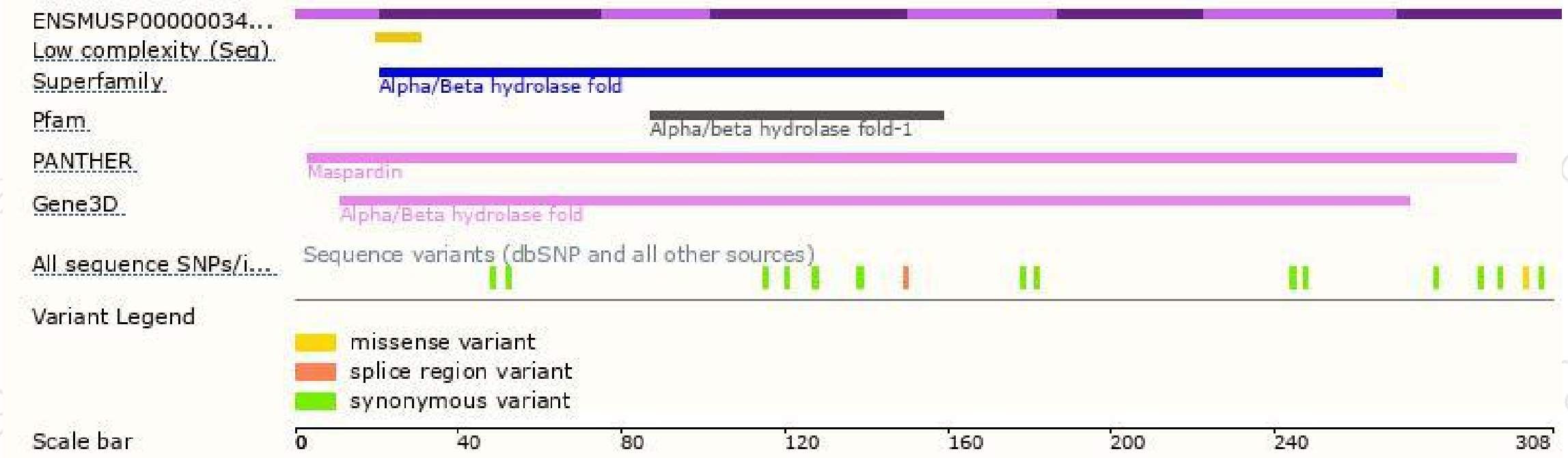
The strategy is based on the design of *Spg21-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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