

S1pr5 Cas9-KO Strategy

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Project Overview

Project Name

S1pr5

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slpr5* gene. The schematic diagram is as follows:



- The *Slpr5* gene has 1 transcript. According to the structure of *Slpr5* gene, exon3 of *Slpr5-201* (ENSMUST00000122088.1) transcript is recommended as the knockout region. The region contains all 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 *Slpr5* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Bone marrow from mice homozygous for a knock-out allele induces impaired NK cell egression from the lymph nodes and bone marrow.
- The knockout region is near to the N-terminal of *Gm48303* and *Keap1* gene, this strategy may influence the regulatory function of the N-terminal of these gene.
- The *Slpr5* 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.
- 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)

S1pr5 sphingosine-1-phosphate receptor 5 [Mus musculus (house mouse)]

Gene ID: 94226, updated on 19-Mar-2019

Summary



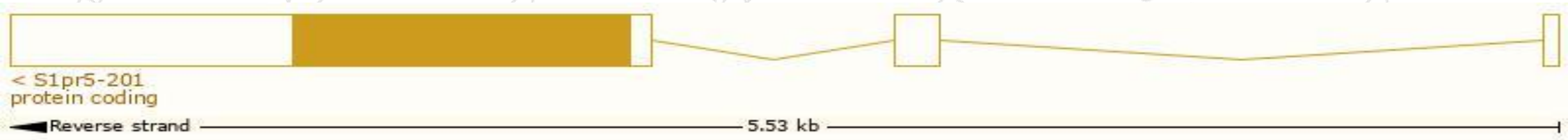
Official Symbol	S1pr5 provided by MGI
Official Full Name	sphingosine-1-phosphate receptor 5 provided by MGI
Primary source	MGI:MGI:2150641
See related	Ensembl:ENSMUSG00000045087
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Edg8, S1P5, IpB4
Expression	Biased expression in cerebellum adult (RPKM 10.8), stomach adult (RPKM 9.4) and 11 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

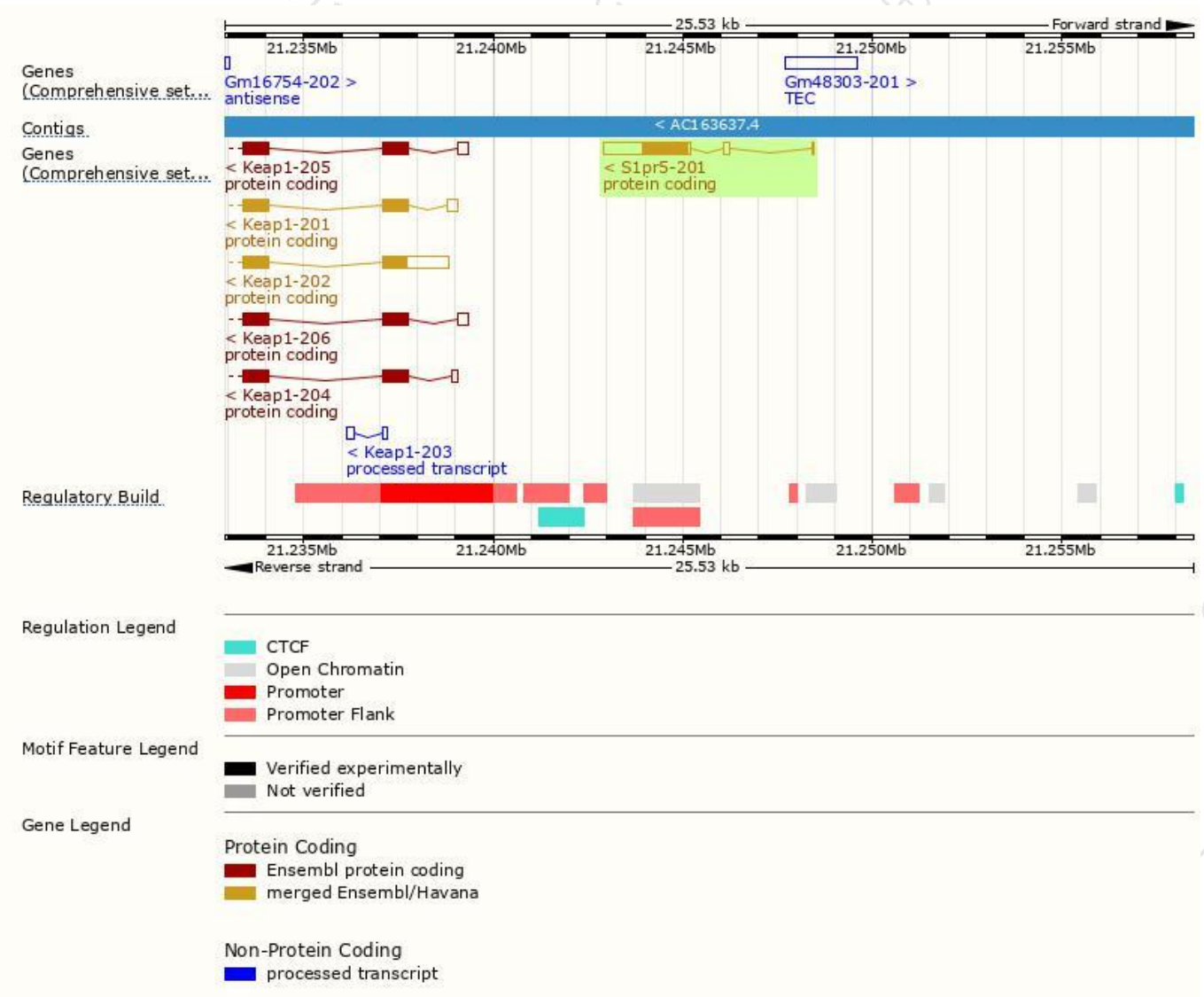
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
S1pr5-201	ENSMUST00000122088.1	2500	400aa	Protein coding	CCDS22898	Q91X56	TSL:2 GENCODE basic APPRIS P1

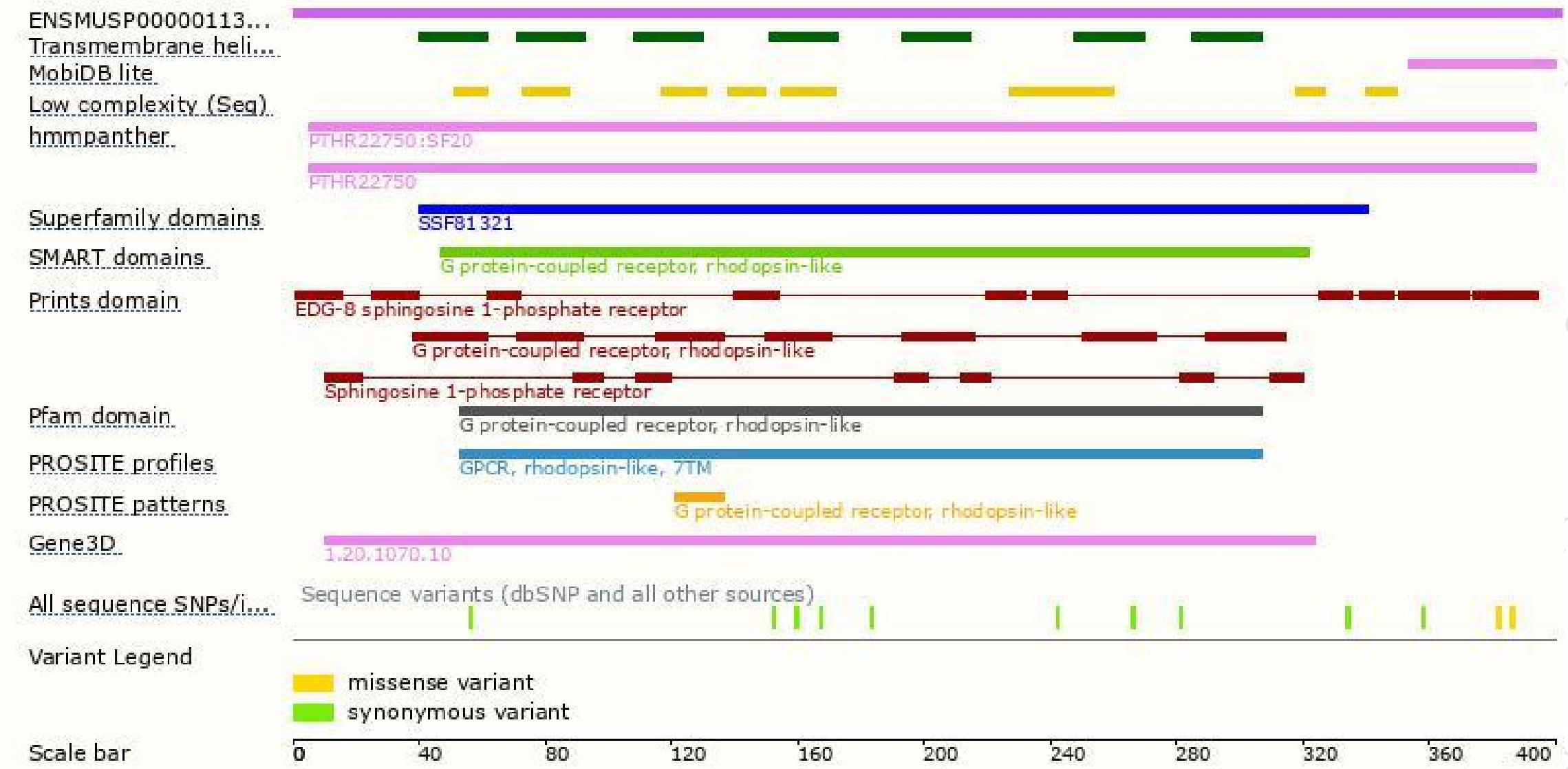
The strategy is based on the design of *S1pr5-201* transcript, The transcription is shown below



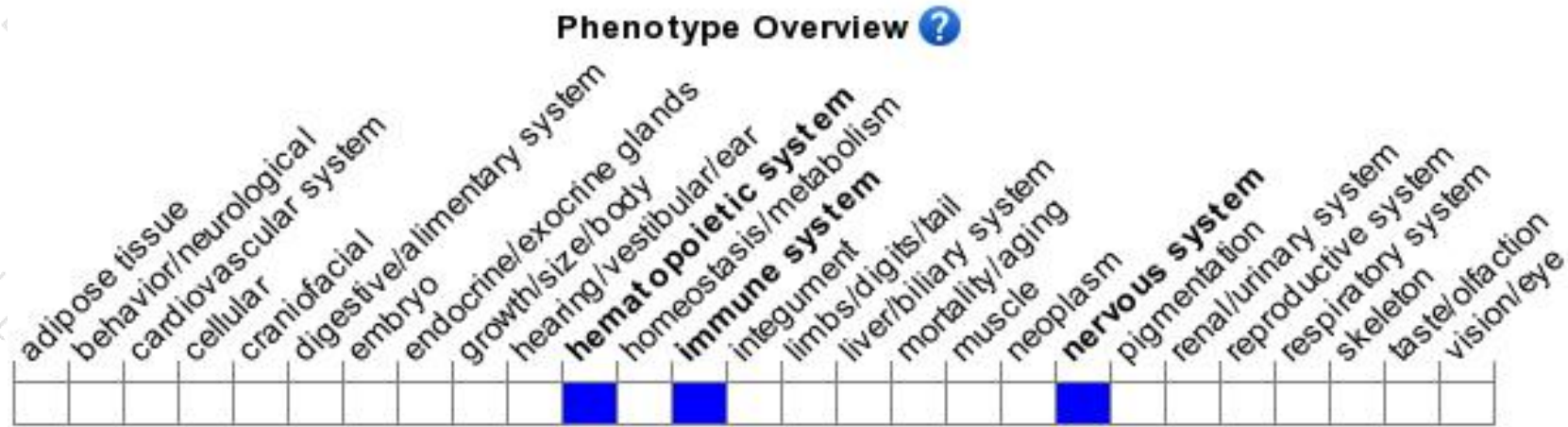
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

According to the existing MGI data, Bone marrow from mice homozygous for a knock-out allele induces impaired NK cell egression from the lymph nodes and bone marrow.

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

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