

Slamf1 Cas9-KO Strategy

Designer:

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Project Overview

Project Name

Slamf1

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slamf1* gene. The schematic diagram is as follows:



- The *Slamf1* gene has 2 transcripts. According to the structure of *Slamf1* gene, exon2-exon5 of *Slamf1-201* (ENSMUST00000015460.4) transcript is recommended as the knockout region. The region contains 809bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slamf1* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Homozygous null mice are fertile and display impaired T cell and macrophage cytokine production.
- The *Slamf1* gene is located on the Chr1. 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)

Slamf1 signaling lymphocytic activation molecule family member 1 [Mus musculus (house mouse)]

Gene ID: 27218, updated on 31-Jan-2019

Summary



Official Symbol	Slamf1 provided by MGI
Official Full Name	signaling lymphocytic activation molecule family member 1 provided by MGI
Primary source	MGI:MGI:1351314
See related	Ensembl:ENSMUSG00000015316
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	4933415F16, AA177906, CD150, CDw150, ESTM51, IPO-3, Slam
Expression	Biased expression in thymus adult (RPKM 5.3), spleen adult (RPKM 1.6) and 5 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

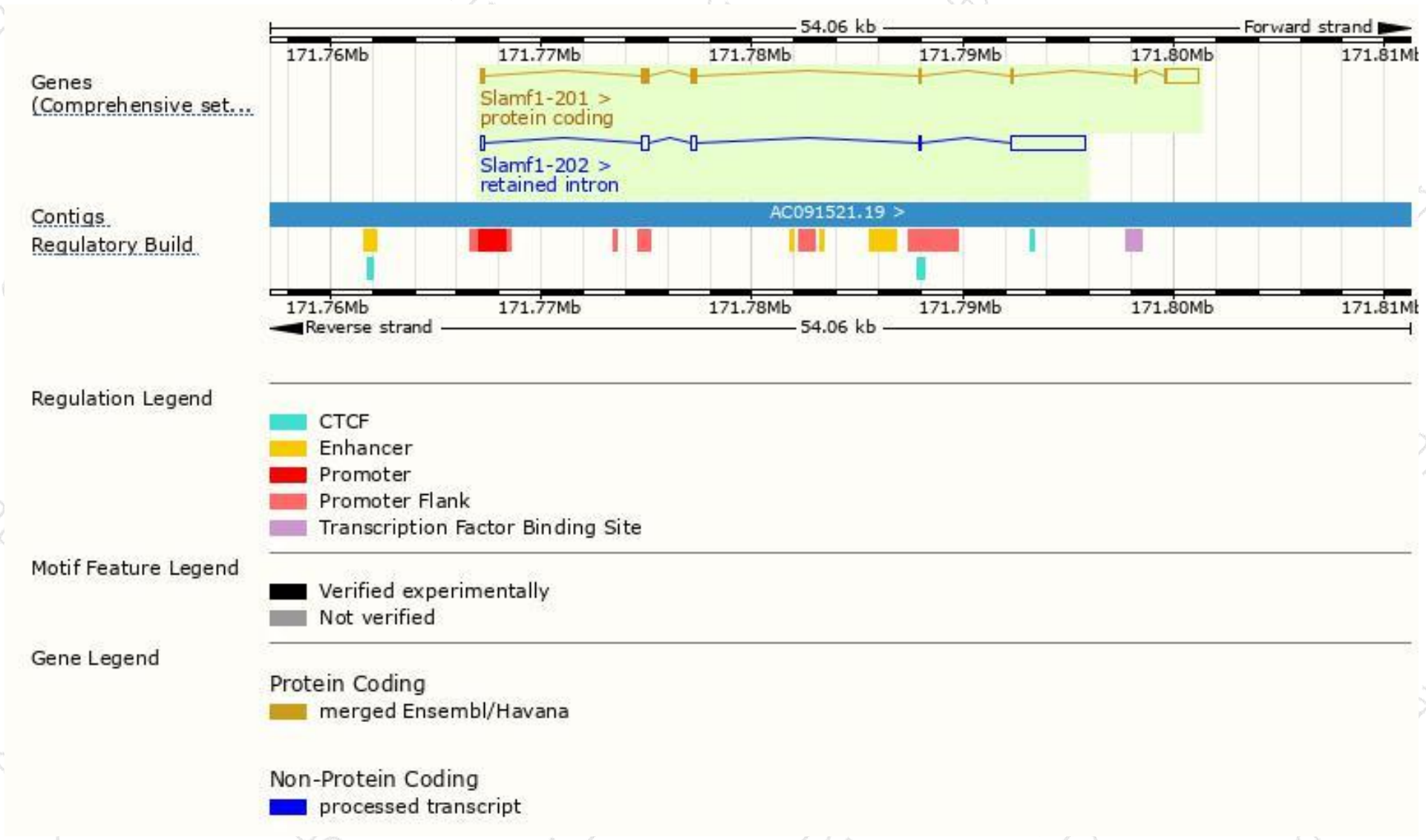
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slamf1-201	ENSMUST00000015460.4	2693	343aa	Protein coding	CCDS15502	Q544K1 Q9QUM4	TSL:1 GENCODE basic APPRIS P1
Slamf1-202	ENSMUST00000163992.2	4420	No protein	Retained intron	-	-	TSL:1

The strategy is based on the design of *Slamf1-201* transcript,The transcription is shown below



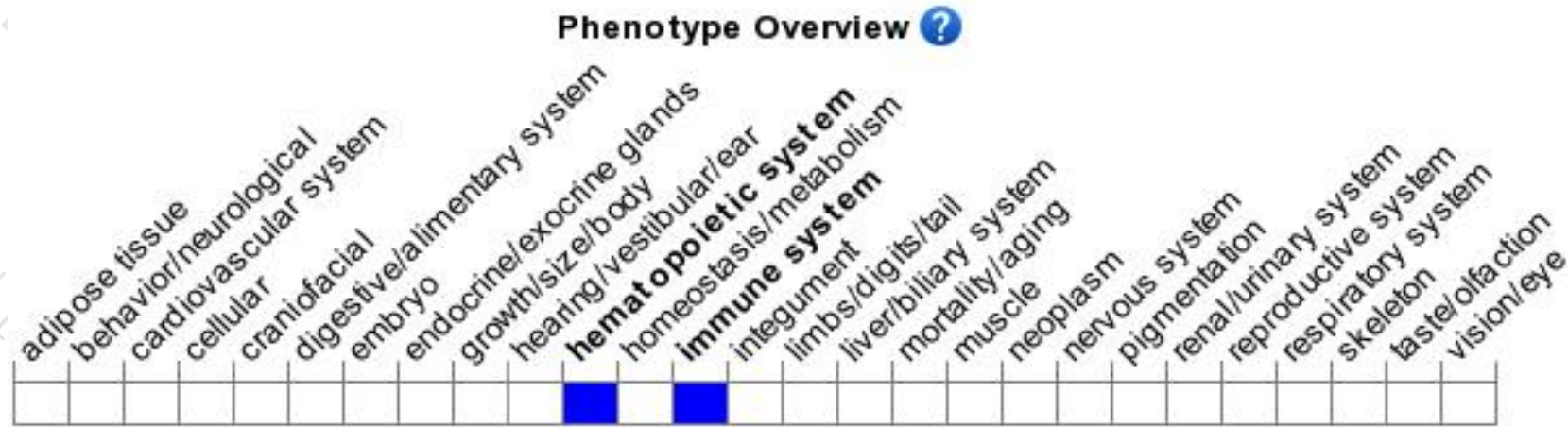
Genomic location distribution



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, Homozygous null mice are fertile and display impaired T cell and macrophage cytokine production.

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

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