

Lgals9 Cas9-KO Strategy

Designer: Xiaojing Li
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Reviewer: Jia Yu

Project Overview

Project Name

Lgals9

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Lgals9* gene. The schematic diagram is as follows:



- The *Lgals9* gene has 4 transcripts. According to the structure of *Lgals9* gene, exon2 of *Lgals9-203* (ENSMUST00000108269.9) transcript is recommended as the knockout region. The region contains 89bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Lgals9* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a null allele exhibit increased susceptibility to collagen-induced arthritis, increased T-helper 1 cells and decreased regulatory T cells.
- The *Lgals9* 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)

Lgals9 lectin, galactose binding, soluble 9 [*Mus musculus* (house mouse)]

Gene ID: 16859, updated on 10-Oct-2019

Summary

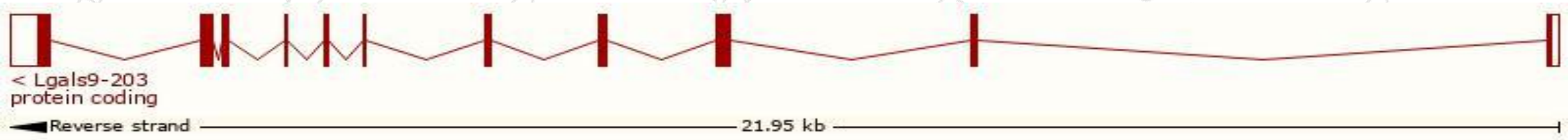
Official Symbol	Lgals9 provided by MGI
Official Full Name	lectin, galactose binding, soluble 9 provided by MGI
Primary source	MGI:MGI:109496
See related	Ensembl:ENSMUSG000000001123
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	gal-9; Lgals5; LGALS35; AA407335; AI194909; AI265545; galectin-9
Expression	Broad expression in liver adult (RPKM 359.2), large intestine adult (RPKM 344.6) and 18 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

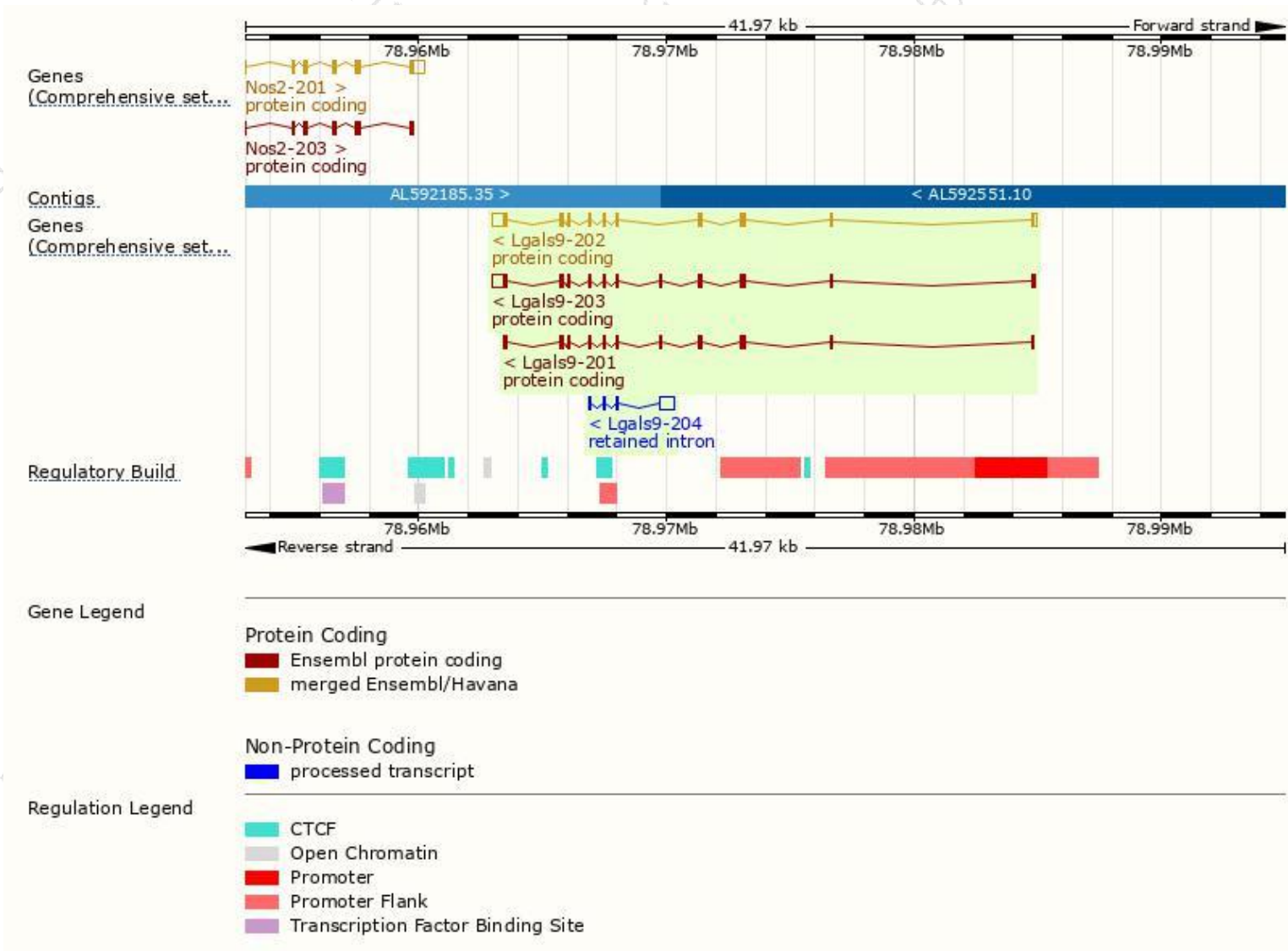
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Lgals9-203	ENSMUST00000108269.9	1586	353aa	Protein coding	CCDS25116	G3X9T7	TSL:1 GENCODE basic APPRIS P3
Lgals9-202	ENSMUST00000108268.9	1520	322aa	Protein coding	CCDS48858	O08573	TSL:1 GENCODE basic APPRIS ALT2
Lgals9-201	ENSMUST00000073001.4	1074	352aa	Protein coding	-	B1AQR8	TSL:5 GENCODE basic APPRIS ALT2
Lgals9-204	ENSMUST00000140073.1	742	No protein	Retained intron	-	-	TSL:5

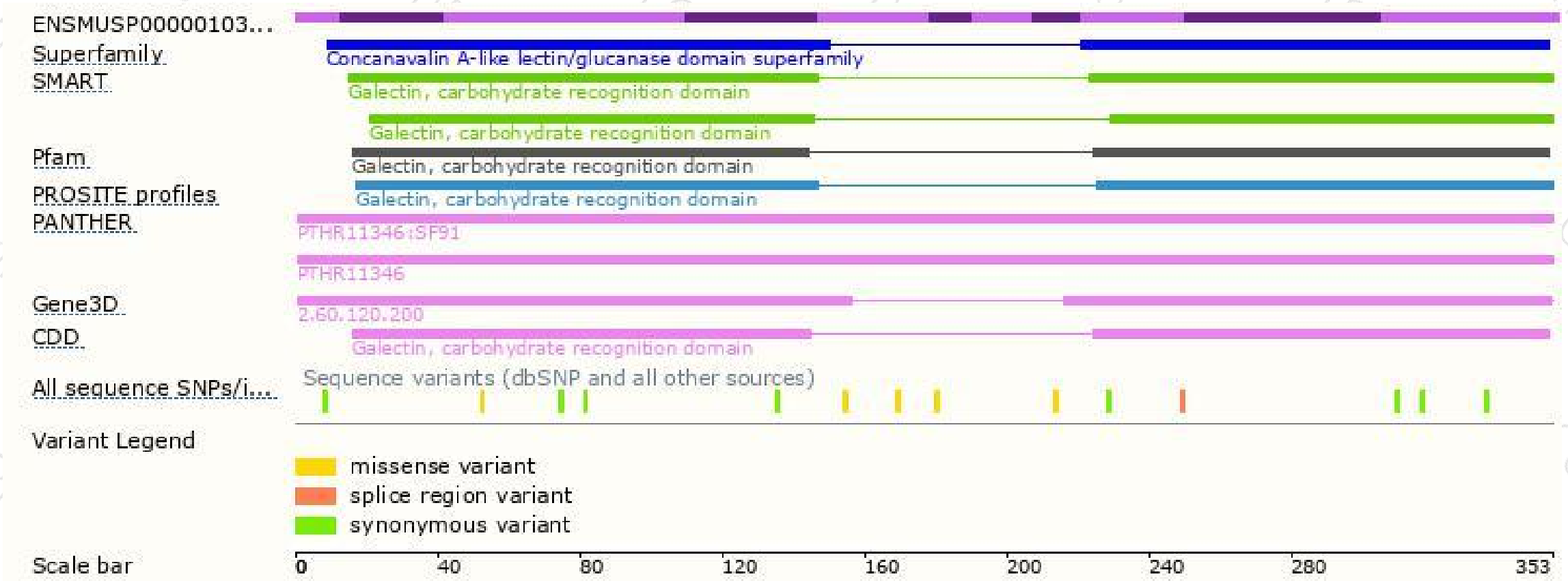
The strategy is based on the design of *Lgals9-203* transcript,The transcription is shown below



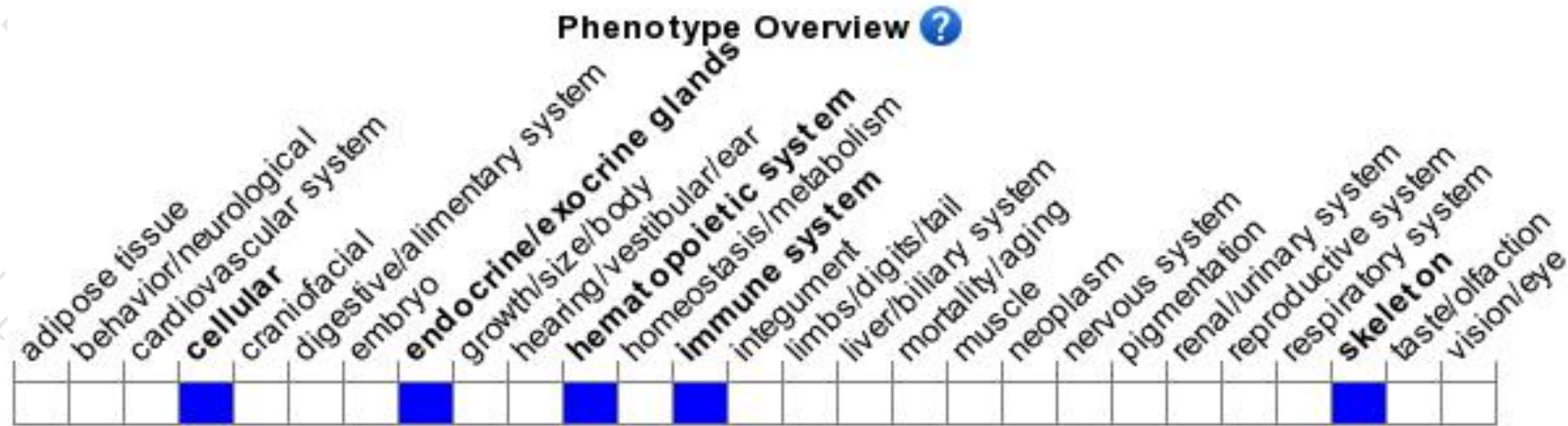
Genomic location distribution



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, Mice homozygous for a null allele exhibit increased susceptibility to collagen-induced arthritis, increased T-helper 1 cells and decreased regulatory T cells.

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

Tel: 400-9660890

