

Lgals8 Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Lgals8

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Lgals8* gene. The schematic diagram is as follows:



- The *Lgals8* gene has 10 transcripts. According to the structure of *Lgals8* gene, exon4-exon9 of *Lgals8-203* (ENSMUST00000124888.7) transcript is recommended as the knockout region. The region contains 593bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Lgals8* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a knock-out allele exhibit reduced VEGF-C-induced lymphangiogenesis, and ameliorated corneal pathology and lymphangiogenesis in a model of herpes simplex virus keratitis. Mice homozygous for a gene trapped allele exhibit hyperactivity.
- The *Lgals8* gene is located on the Chr13. 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)

Lgals8 lectin, galactose binding, soluble 8 [Mus musculus (house mouse)]

Gene ID: 56048, updated on 31-Jan-2019

Summary



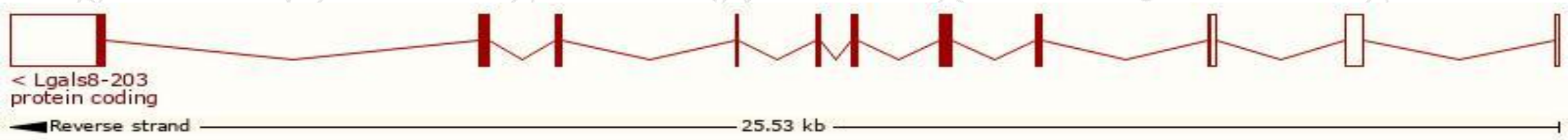
Official Symbol	Lgals8 provided by MGI
Official Full Name	lectin, galactose binding, soluble 8 provided by MGI
Primary source	MGI:MGI:1928481
See related	Ensembl:ENSMUSG00000057554
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1200015E08Rik, A1326142, D13Etd524e, Lgals-8
Expression	Ubiquitous expression in testis adult (RPKM 33.3), bladder adult (RPKM 18.6) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

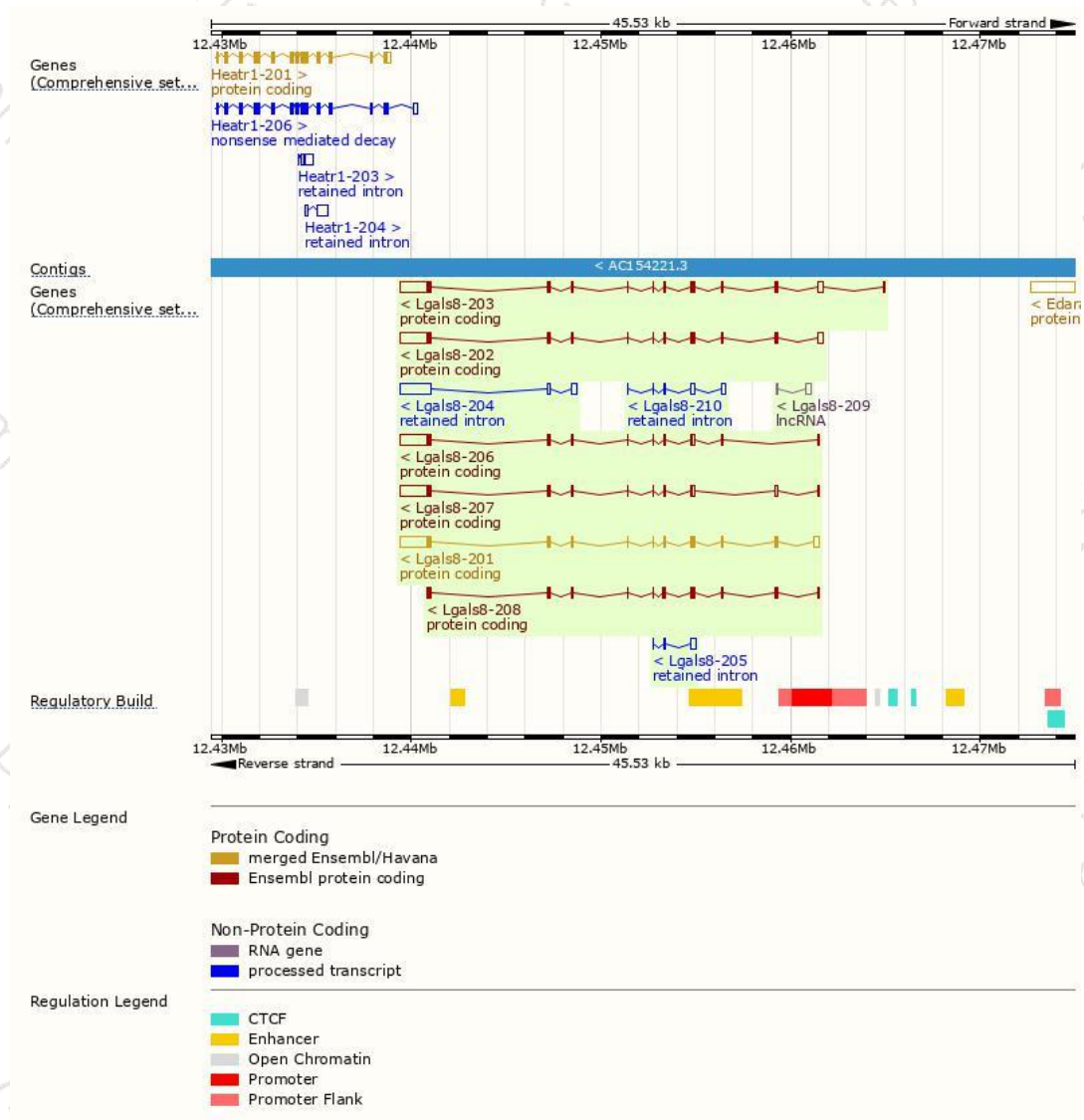
The gene has 10 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Lgals8-203	ENSMUST00000124888.7	2843	316aa	Protein coding	CCDS36592	Q542M5 Q9JL15	TSL:1 GENCODE basic APPRIS P1
Lgals8-202	ENSMUST00000099821.9	2792	316aa	Protein coding	CCDS36592	Q542M5 Q9JL15	TSL:1 GENCODE basic APPRIS P1
Lgals8-201	ENSMUST00000099820.9	2736	316aa	Protein coding	CCDS36592	Q542M5 Q9JL15	TSL:1 GENCODE basic APPRIS P1
Lgals8-207	ENSMUST00000143693.7	2457	223aa	Protein coding	CCDS70430	Q8C6H0	TSL:1 GENCODE basic
Lgals8-206	ENSMUST00000135166.7	2416	223aa	Protein coding	CCDS70430	Q8C6H0	TSL:1 GENCODE basic
Lgals8-208	ENSMUST00000144283.1	1148	325aa	Protein coding	CCDS70431	A8DIL0	TSL:5 GENCODE basic
Lgals8-204	ENSMUST00000133143.1	2062	No protein	Retained intron	-	-	TSL:2
Lgals8-210	ENSMUST00000155871.7	579	No protein	Retained intron	-	-	TSL:5
Lgals8-205	ENSMUST00000135060.1	441	No protein	Retained intron	-	-	TSL:3
Lgals8-209	ENSMUST00000152478.1	289	No protein	lncRNA	-	-	TSL:3

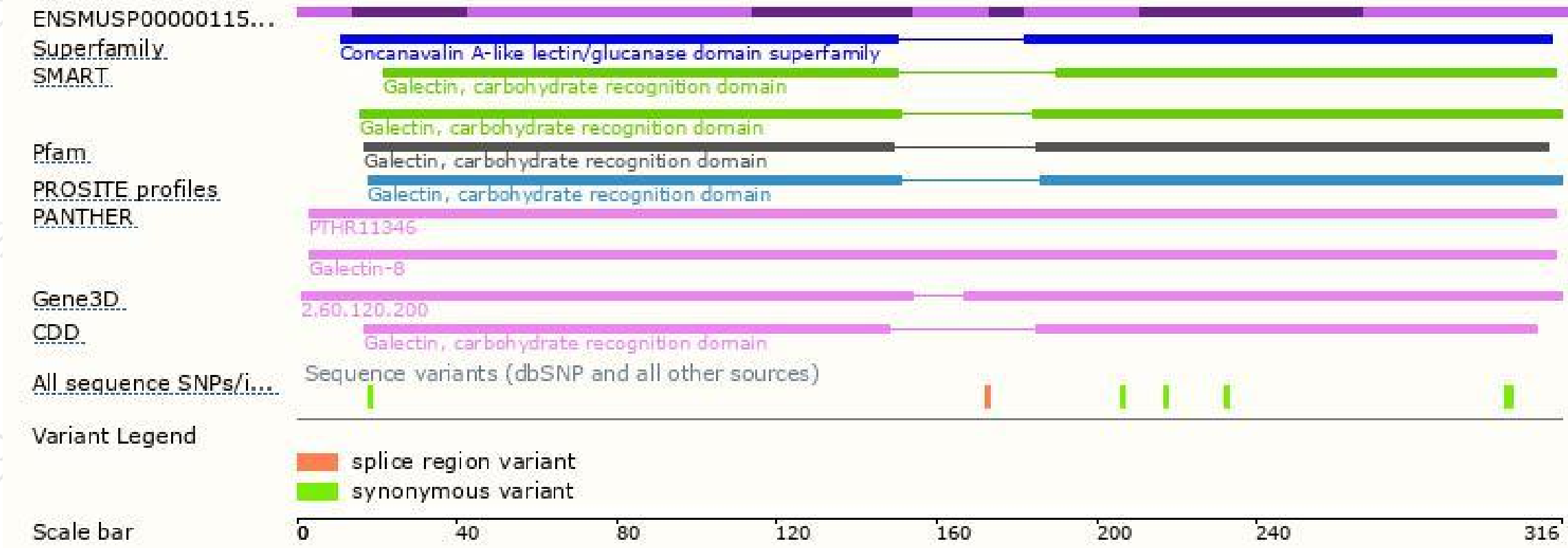
The strategy is based on the design of *Lgals8-203* transcript,The transcription is shown below



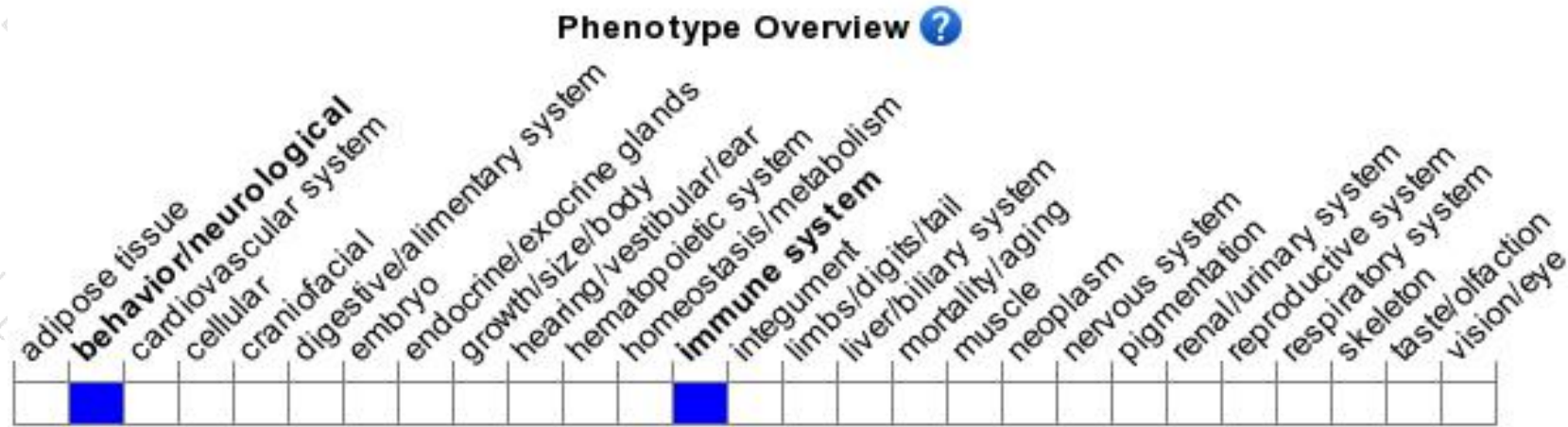
Genomic location distribution



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 knock-out allele exhibit reduced VEGF-C-induced lymphangiogenesis, and ameliorated corneal pathology and lymphangiogenesis in a model of herpes simplex virus keratitis. Mice homozygous for a gene trapped allele exhibit hyperactivity.

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

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