

Lgi4 Cas9-KO Strategy

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Project Overview

Project Name

Lgi4

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Lgi4* gene. The schematic diagram is as follows:



- The *Lgi4* gene has 4 transcripts. According to the structure of *Lgi4* gene, exon4-exon6 of *Lgi4-201* (ENSMUST00000039775.8) transcript is recommended as the knockout region. The region contains 314bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Lgi4* gene. The brief process is as follows: CRISPR/Cas9 system w

- According to the existing MGI data, Homozygous mutant animals have an abnormal posture where the forelimbs are flexed and rotated inwards. The peripheral nervous system is delayed in myelination.
- The *Lgi4* gene is located on the Chr7. 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)

Lgi4 leucine-rich repeat LGI family, member 4 [Mus musculus (house mouse)]

Gene ID: 243914, updated on 31-Jan-2019

Summary



Official Symbol	Lgi4 provided by MGI
Official Full Name	leucine-rich repeat LGI family, member 4 provided by MGI
Primary source	MGI:MGI:2180197
See related	Ensembl:ENSMUSG00000036560
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Lgil3, clp
Expression	Broad expression in stomach adult (RPKM 10.9), bladder adult (RPKM 9.6) 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
Lgi4-201	ENSMUST00000039775.8	4037	537aa	Protein coding	CCDS21124	Q8K1S1	TSL:1 GENCODE basic APPRIS P1
Lgi4-204	ENSMUST00000172001.1	456	90aa	Protein coding	-	F7CXY1	CDS 5' incomplete TSL:3
Lgi4-202	ENSMUST00000164725.2	556	16aa	Nonsense mediated decay	-	A0A0U1RPJ8	CDS 5' incomplete TSL:3
Lgi4-203	ENSMUST00000169785.7	491	71aa	Nonsense mediated decay	-	A0A0U1RNQ3	CDS 5' incomplete TSL:3

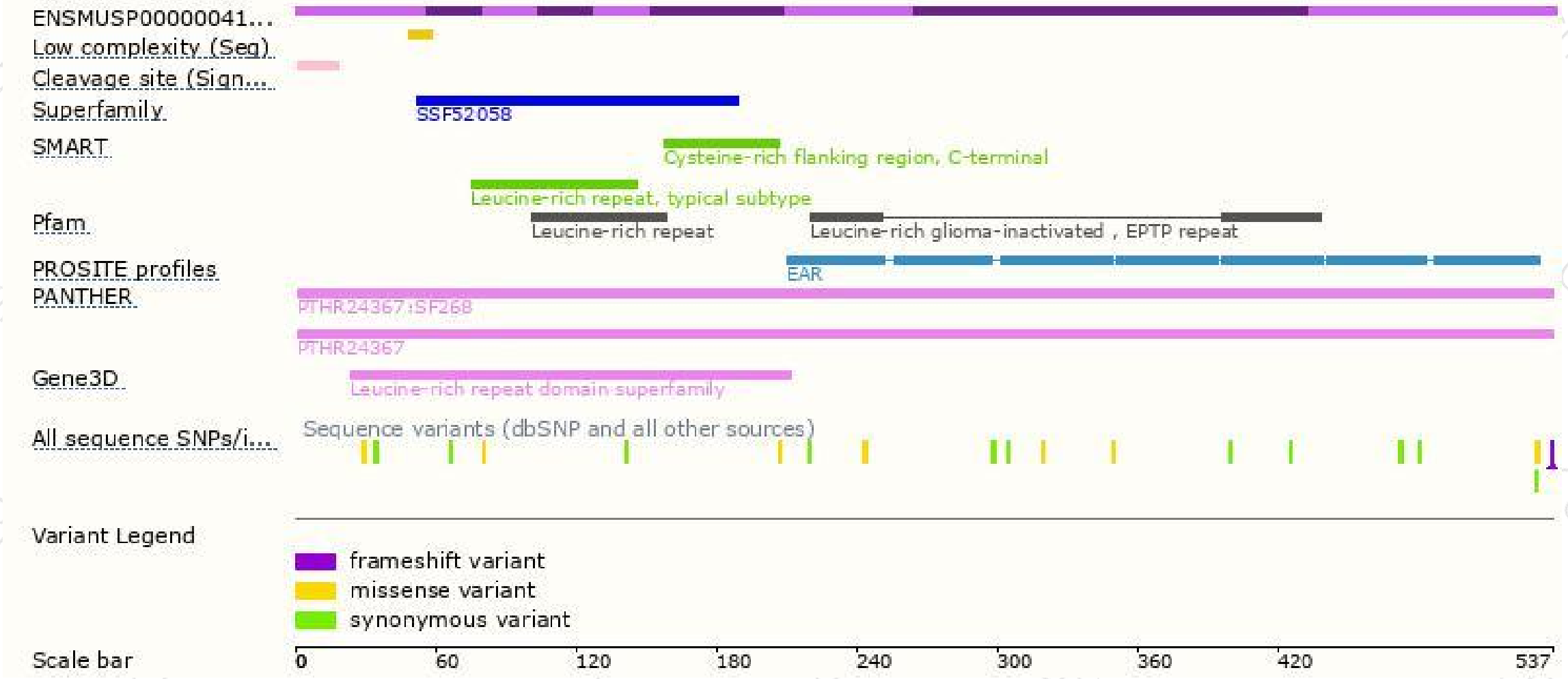
The strategy is based on the design of *Lgi4-201* transcript,The transcription is shown below



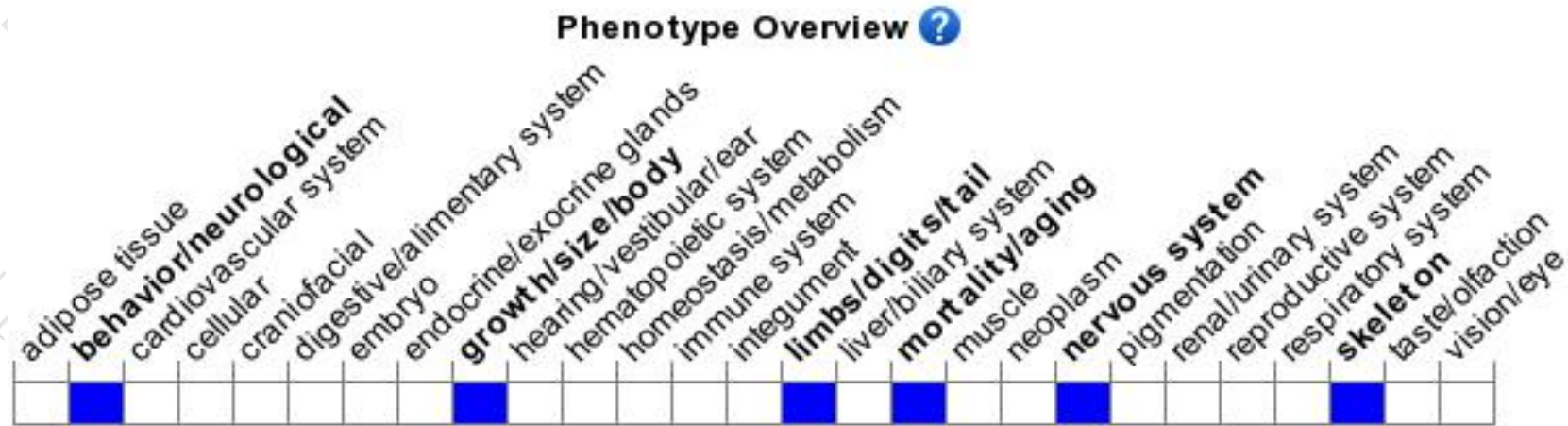
Genomic location distribution



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 mutant animals have an abnormal posture where the forelimbs are flexed and rotated inwards. The peripheral nervous system is delayed in myelination.

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

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