

Gle1 Cas9-CKO Strategy

Designer:

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Project Overview

Project Name

Gle1

Project type

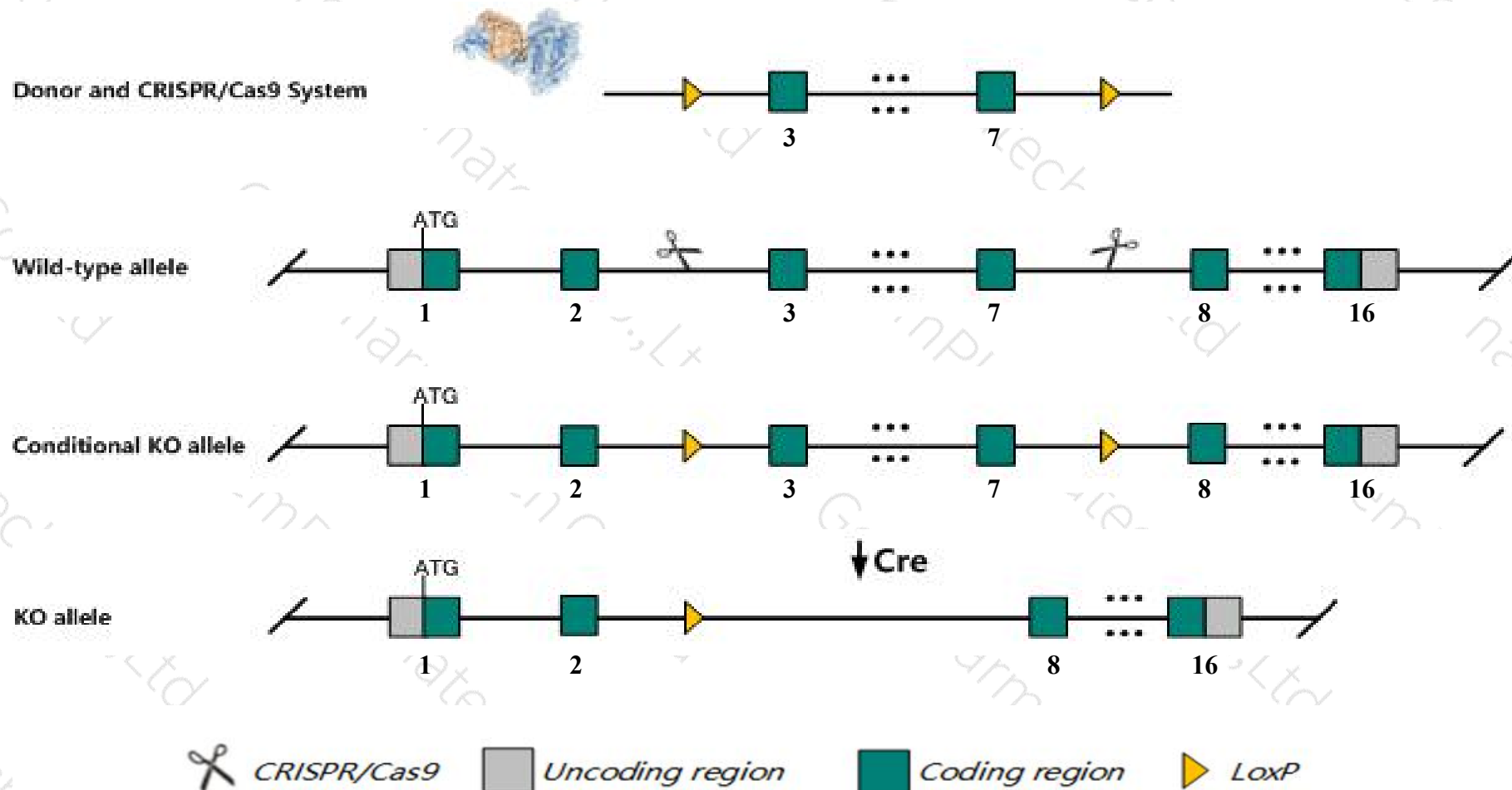
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gle1* gene. The schematic diagram is as follows:



- The *Gle1* gene has 7 transcripts. According to the structure of *Gle1* gene, exon3-exon7 of *Gle1-201* (ENSMUST00000019859.8) transcript is recommended as the knockout region. The region contains 805bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Gle1* gene. The brief process is as follows: CRISPR/Cas9 system and Donor were microinjected into the fertilized eggs of C57BL/6JGpt mice. Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.
- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

- The *Gle1* gene is located on the Chr2. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Gle1 GLE1 RNA export mediator (yeast) [Mus musculus (house mouse)]

Gene ID: 74412, updated on 31-Jan-2019

Summary



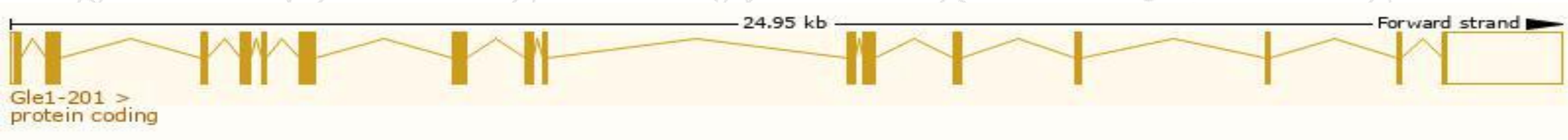
Official Symbol	Gle1 provided by MGI
Official Full Name	GLE1 RNA export mediator (yeast) provided by MGI
Primary source	MGI:MGI:1921662
See related	Ensembl:ENSMUSG00000019715
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4933405K21Rik, AA553313, Gle1l
Expression	Ubiquitous expression in cerebellum adult (RPKM 15.0), CNS E18 (RPKM 14.4) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

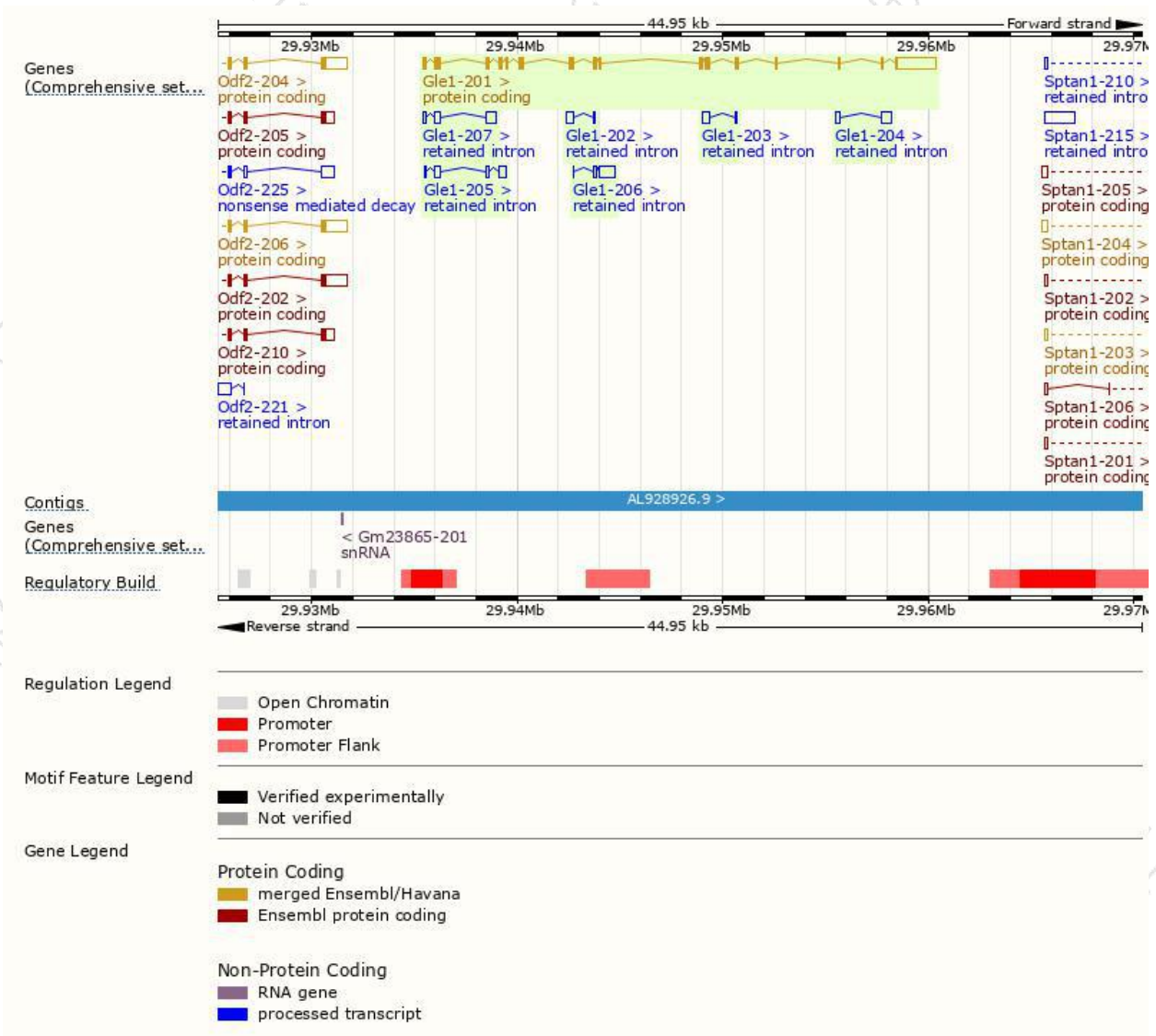
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gle1-201	ENSMUST00000019859.8	4030	699aa	Protein coding	CCDS15862	Q8R322	TSL:1 GENCODE basic APPRIS P1
Gle1-206	ENSMUST00000149730.1	931	No protein	Retained intron	-	-	TSL:3
Gle1-207	ENSMUST00000154490.7	860	No protein	Retained intron	-	-	TSL:1
Gle1-205	ENSMUST00000148983.1	776	No protein	Retained intron	-	-	TSL:2
Gle1-204	ENSMUST00000127390.1	650	No protein	Retained intron	-	-	TSL:3
Gle1-202	ENSMUST00000123608.1	468	No protein	Retained intron	-	-	TSL:3
Gle1-203	ENSMUST00000124687.1	371	No protein	Retained intron	-	-	TSL:1

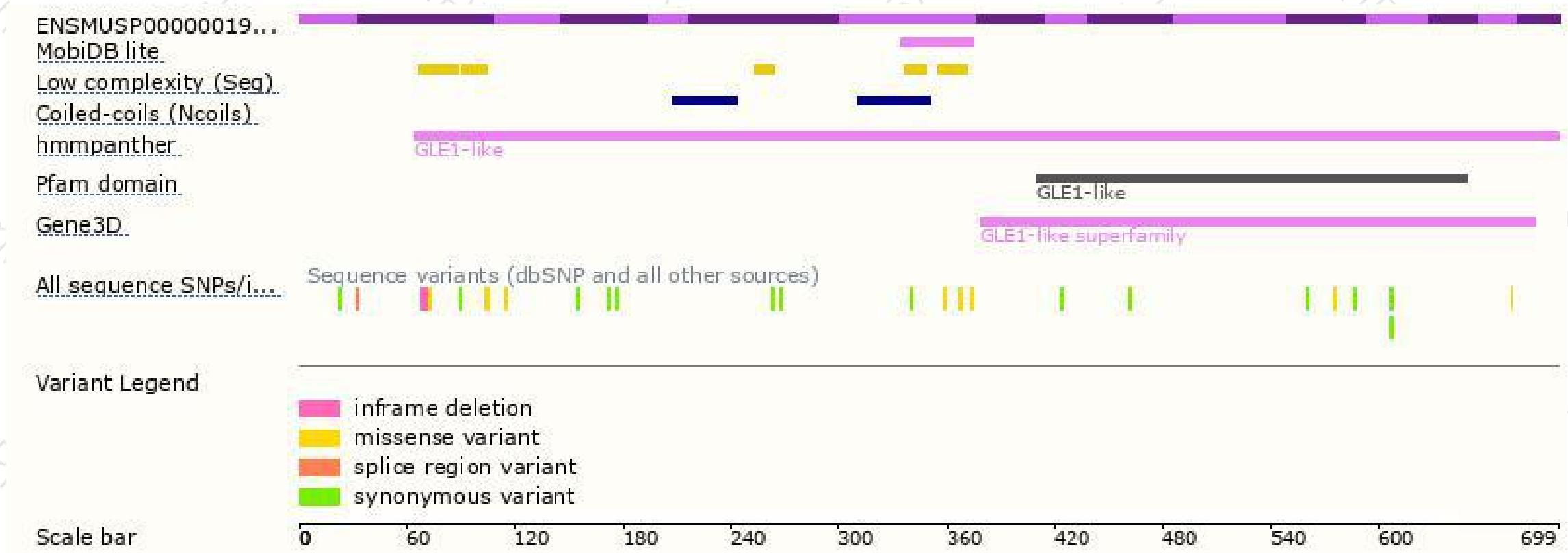
The strategy is based on the design of *Gle1-201* transcript,The transcription is shown below



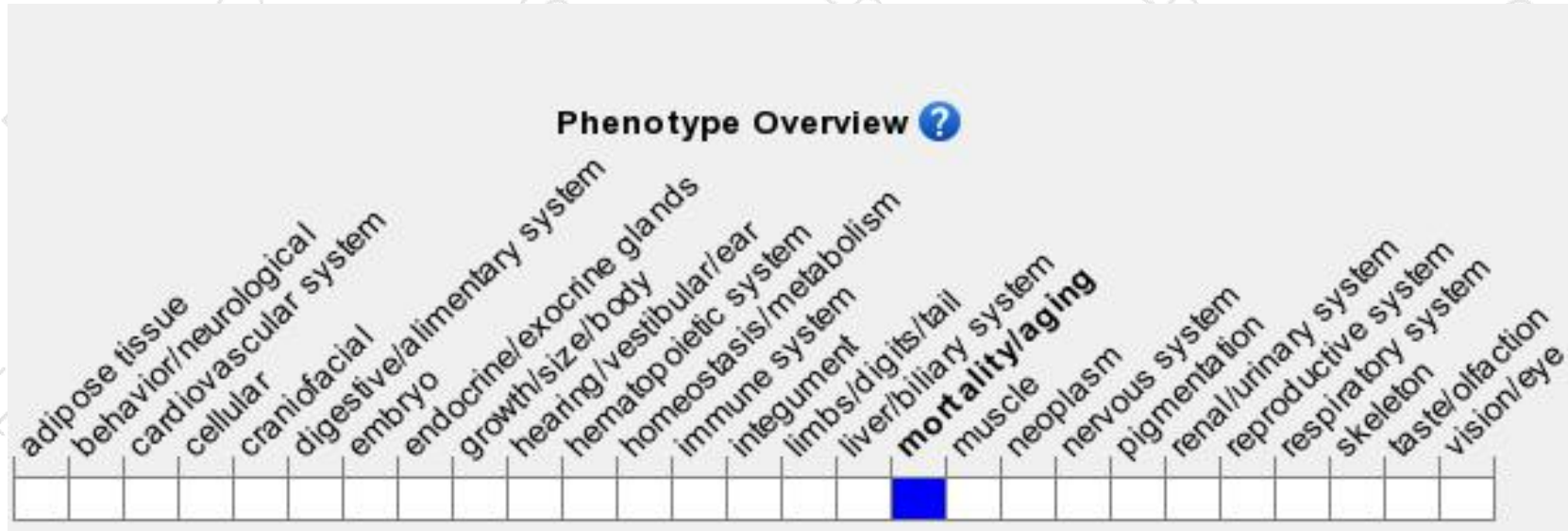
Genomic location distribution



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/>).

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

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