C1ql3 Cas9-KO Strategy

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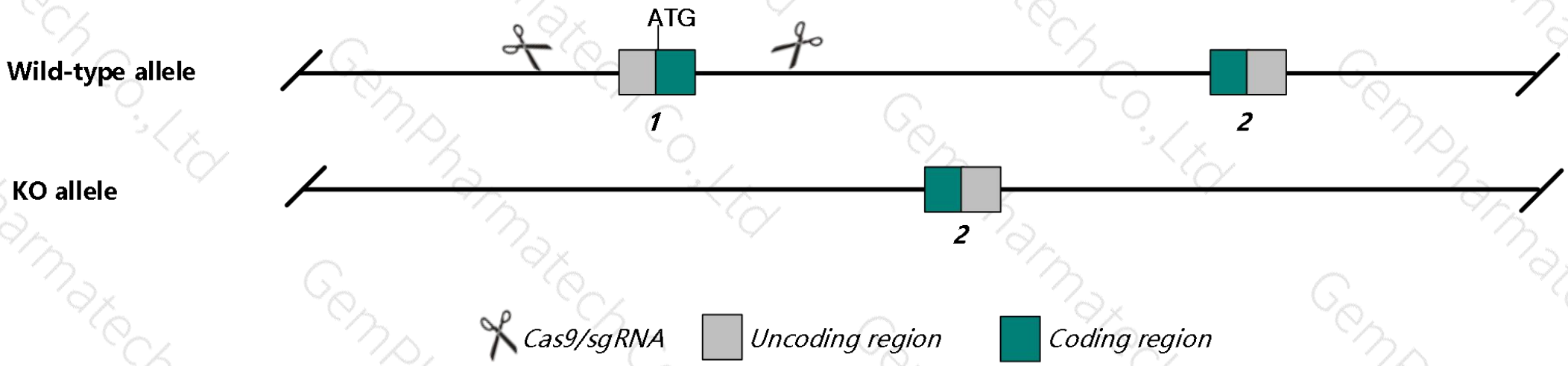
Project Overview

Project Name	***C1ql3***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *C1ql3* gene. The schematic diagram is as follows:



Technical routes

➢The *C1ql3* gene has 1 transcript. According to the structure of *C1ql3* gene, exon1 of *C1ql3-201* (ENSMUST00000061545.6) transcript is recommended as the knockout region.The region contains start codon ATG. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *C1ql3* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

➢ According to the existing MGI data,Mice homozygous for a knock-out allele exhibit impaired coordination, hyperactivity, decreased anxiety-related response, impaired contextual conditioning behavior, impaired CPP, impaired conditioned taste aversion and reduced density of excitatory synapses.

➢ The flox region contain the Gm37811 and Gm37356 gene, which may delet it after Cre.

➢ The C1ql3 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information （NCBI）

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C1ql3 C1q-like 3 [*Mus musculus* (house mouse)]

Gene ID: 227580, updated on 13-Mar-2020

Summary

Official Symbol	C1ql3 provided by MGI
Official Full Name	C1q-like 3 provided by MGI
Primary source	MGI:MGI:2387350
See related	Ensembl:ENSMUSG00000049630
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	Adij; C1ql; K100; CTRP13; AI661623; C1qtnf13; 1110065A22Rik
Expression	Biased expression in frontal lobe adult (RPKM 21.1), cortex adult (RPKM 17.2) and 6 other tissues See more
Orthologs	human all

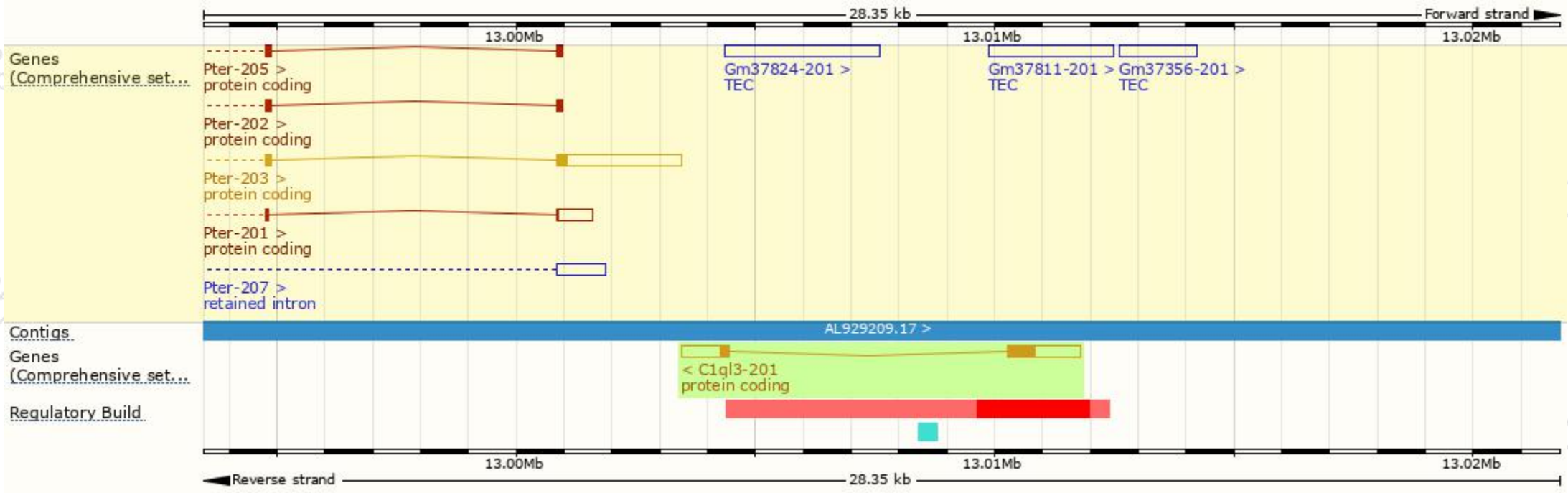
Transcript information（Ensembl）

The gene has 1 transcripts,and the transcript is shown below:

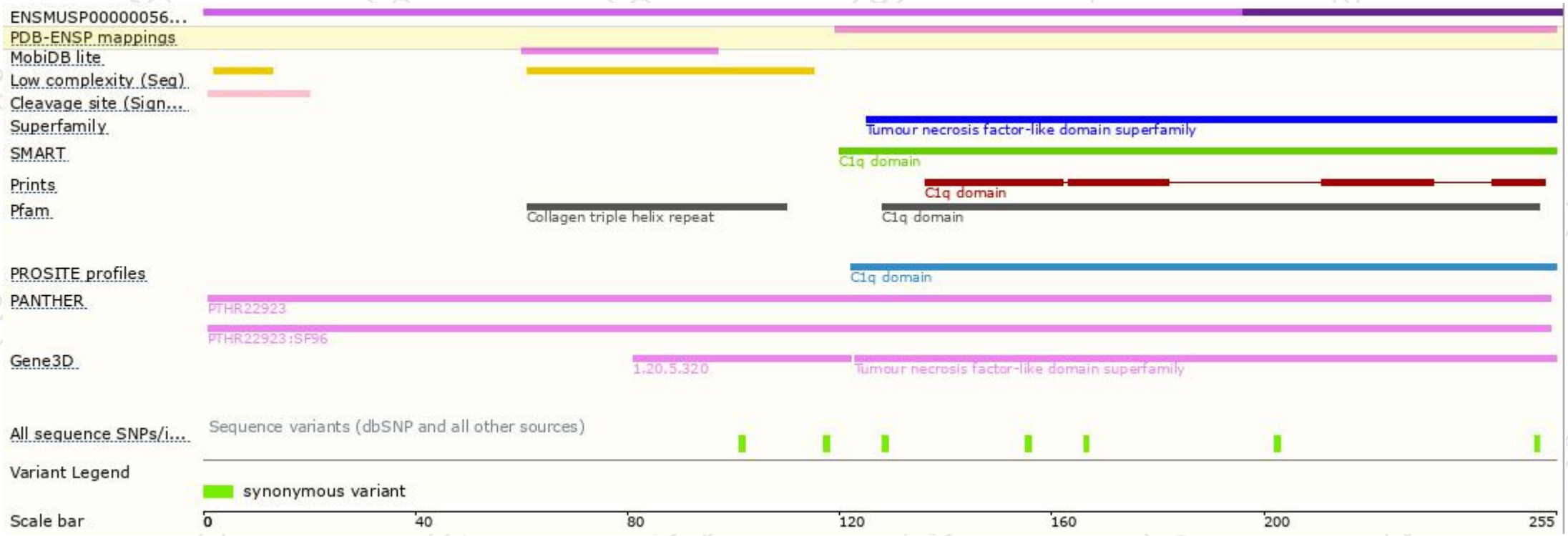
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
C1ql3-201	ENSMUST00000061545.6	2535	255aa	Protein coding	CCDS15692	A0A3B0IT58 Q9ESN4	TSL:1 GENCODE basic APPRIS P1

The strategy is based on the design of *C1ql3-201* transcript,The transcription is shown below

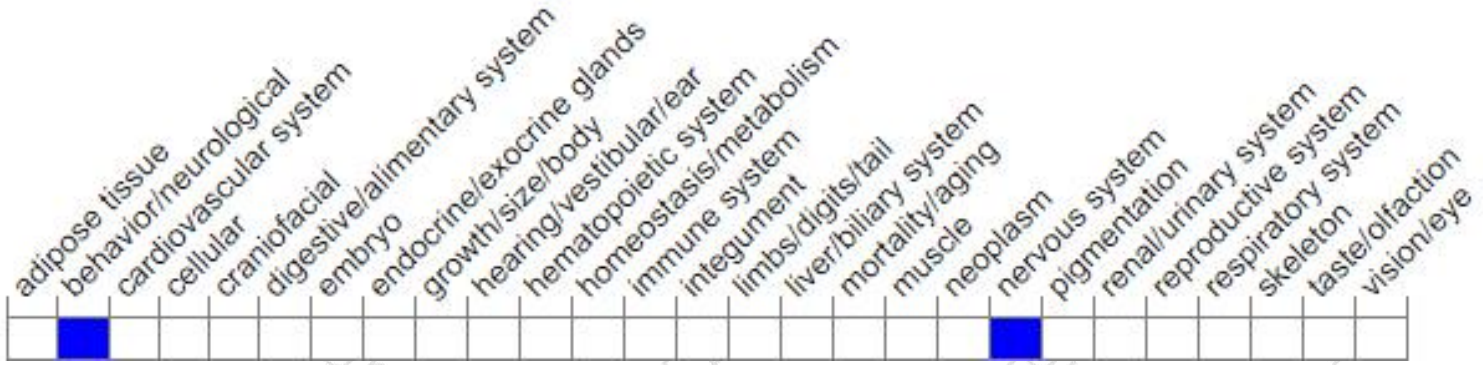
Genomic location distribution



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/).

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

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