Ggt7 Cas9-KO Strategy

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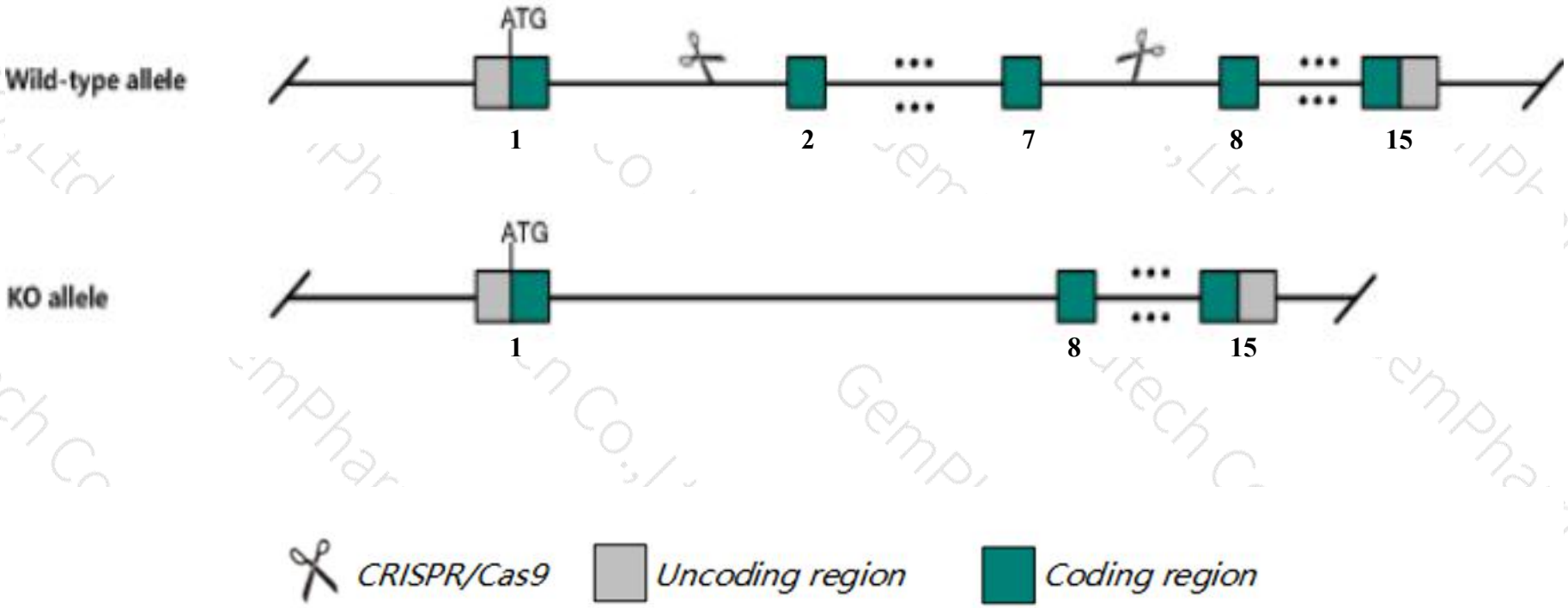
Design Date: 2020-6-16

Project Overview

Project Name	***Ggt7***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ggt7* gene. The schematic diagram is as follows:



Technical routes

➢ The *Ggt7* gene has 5 transcripts. According to the structure of *Ggt7* gene, exon2-exon7 of *Ggt7-201* (ENSMUST00000029131.10) transcript is recommended as the knockout region.The region contains 845bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Ggt7* gene. The brief process is as follows: CRISPR/Cas9 system v

Notice

- The *Ggt7* 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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Ggt7 gamma-glutamyltransferase 7 [Mus musculus (house mouse)]

Gene ID: 207182, updated on 13-Mar-2020

Summary

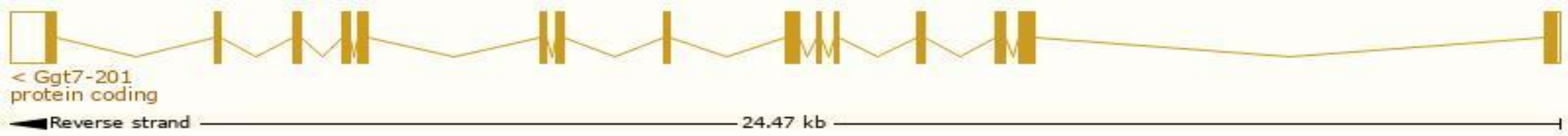
Official Symbol	Ggt7 provided by MGI
Official Full Name	gamma-glutamyltransferase 7 provided byMGI
Primary source	MGI:MGI:1913385
See related	Ensembl:ENSMUSG00000027603
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1110017C11Rik, 6330563L03Rik, Ggtl3
Expression	Broad expression in cerebellum adult (RPKM 36.7), cortex adult (RPKM 34.9) and 16 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

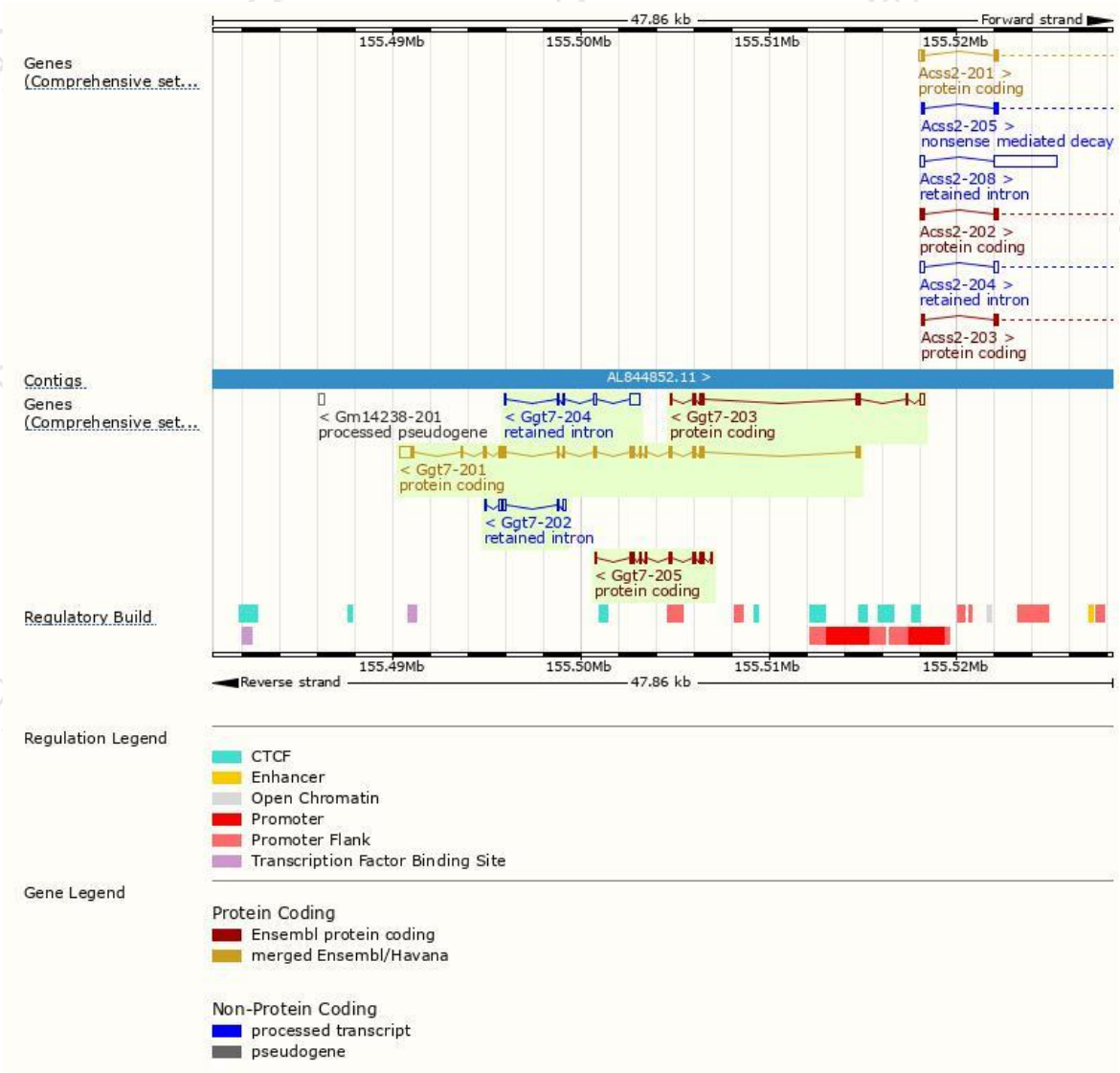
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ggt7-201	ENSMUST00000029131.10	2614	662aa	Protein coding	CCDS16949	Q99JP7	TSL:1 GENCODE basic APPRIS P1
Ggt7-203	ENSMUST00000147601.1	956	202aa	Protein coding	-	A2AQN2	CDS 3' incomplete TSL:5
Ggt7-205	ENSMUST00000176117.7	887	270aa	Protein coding	-	H3BKA5	CDS 3' incomplete TSL:5
Ggt7-204	ENSMUST00000148296.1	874	No protein	Retained intron	-	-	TSL:3
Ggt7-202	ENSMUST00000138033.7	603	No protein	Retained intron	-	-	TSL:3

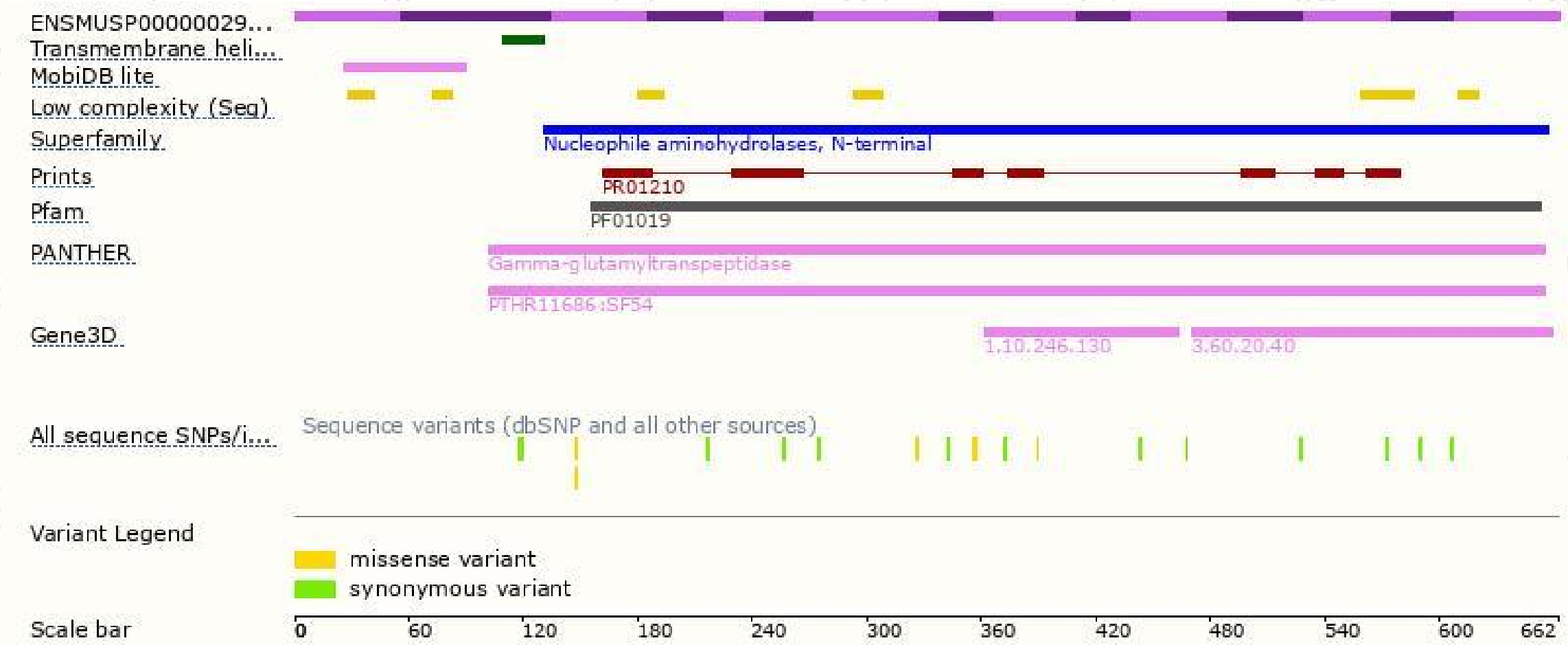
The strategy is based on the design of *Ggt7-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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