

***Gatb* Cas9-KO Strategy**

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Project Overview

Project Name

Gatb

Project type

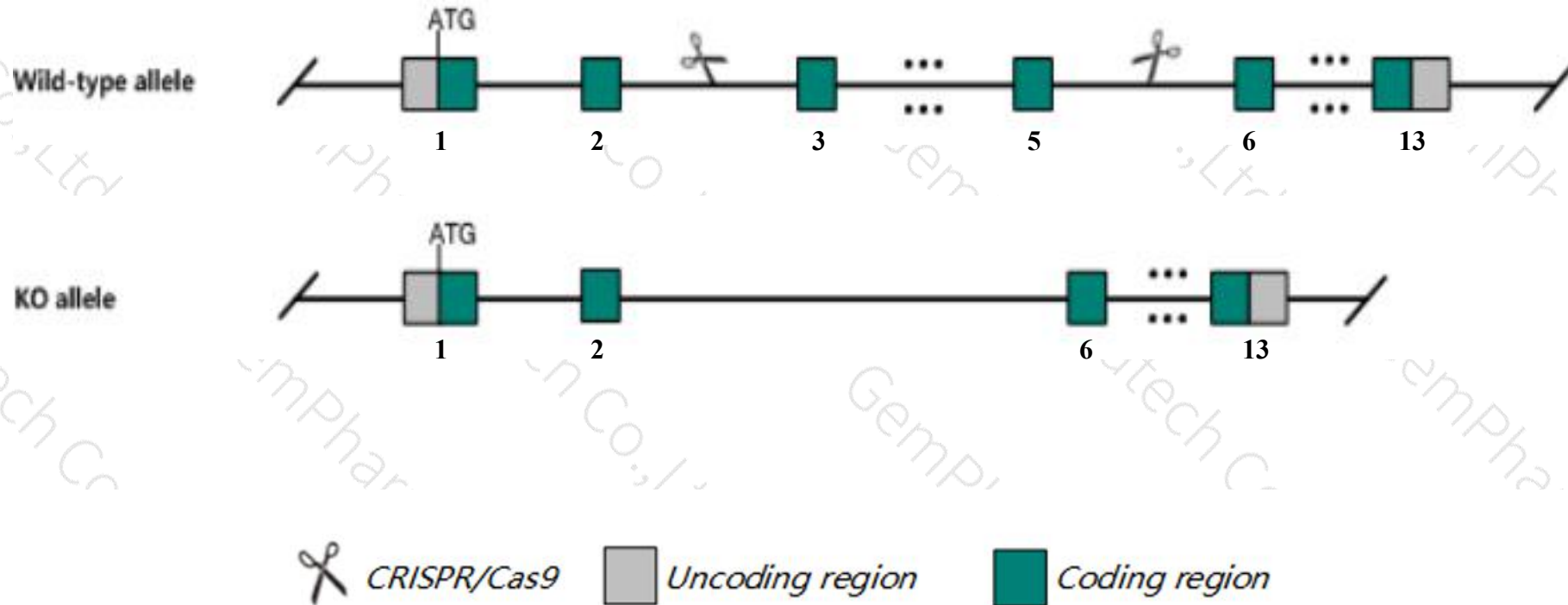
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Gatb* gene has 5 transcripts. According to the structure of *Gatb* gene, exon3-exon5 of *Gatb*-204 (ENSMUST00000127348.7) transcript is recommended as the knockout region. The region contains 436bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Gatb* gene. The brief process is as follows: CRISPR/Cas9 system v

- The *Gatb* gene is located on the Chr3. 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.
- The knockout region overlaps with the intron of Gm37240-203, which may affect its normal shear regulation.
- 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)

Gatb glutamyl-tRNA(Gln) amidotransferase, subunit B [Mus musculus (house mouse)]

Gene ID: 229487, updated on 13-Mar-2020

Summary



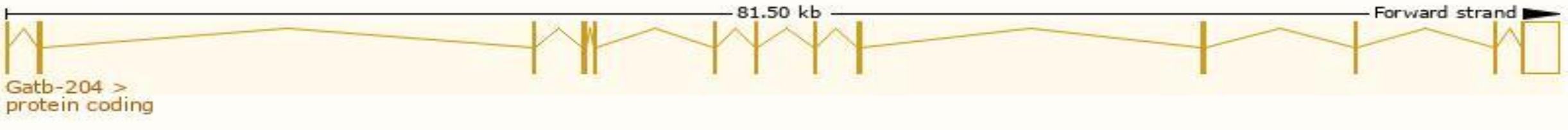
Official Symbol	Gatb provided by MGI
Official Full Name	glutamyl-tRNA(Gln) amidotransferase, subunit B provided by MGI
Primary source	MGI:MGI:2442496
See related	Ensembl:ENSMUSG00000028085
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9430026F02Rik, Pet112, Pet112l
Expression	Ubiquitous expression in kidney adult (RPKM 8.6), heart adult (RPKM 5.7) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

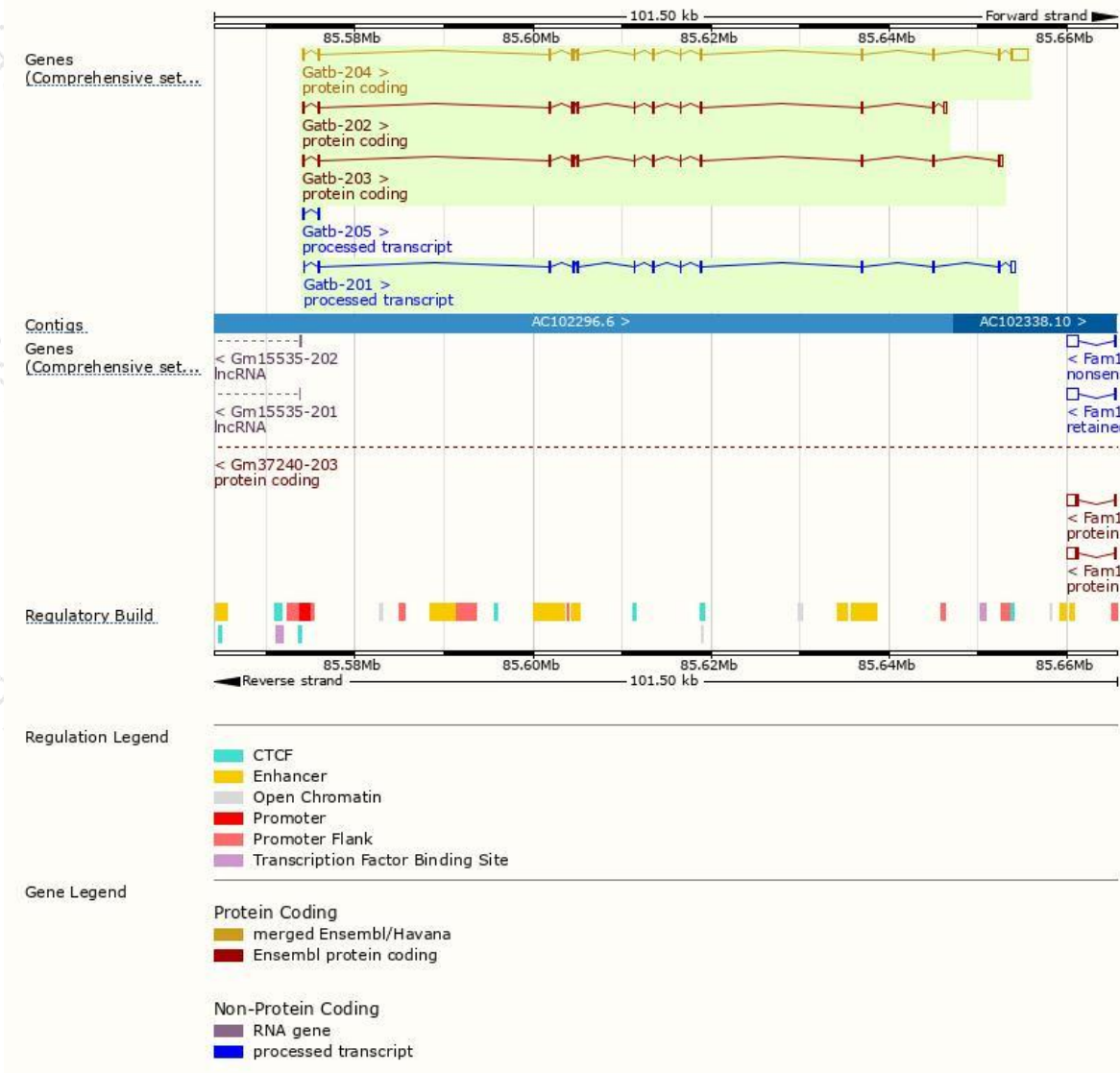
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gatb-204	ENSMUST00000127348.7	3469	557aa	Protein coding	CCDS17441	Q99JT1	TSL:1 GENCODE basic APPRIS P1
Gatb-203	ENSMUST00000107674.1	1980	553aa	Protein coding	-	Q8BW84	TSL:1 GENCODE basic
Gatb-202	ENSMUST00000107672.7	1820	472aa	Protein coding	-	Q3TLZ6	TSL:1 GENCODE basic
Gatb-201	ENSMUST00000029726.5	1856	No protein	Processed transcript	-	-	TSL:1
Gatb-205	ENSMUST00000134273.1	366	No protein	Processed transcript	-	-	TSL:3

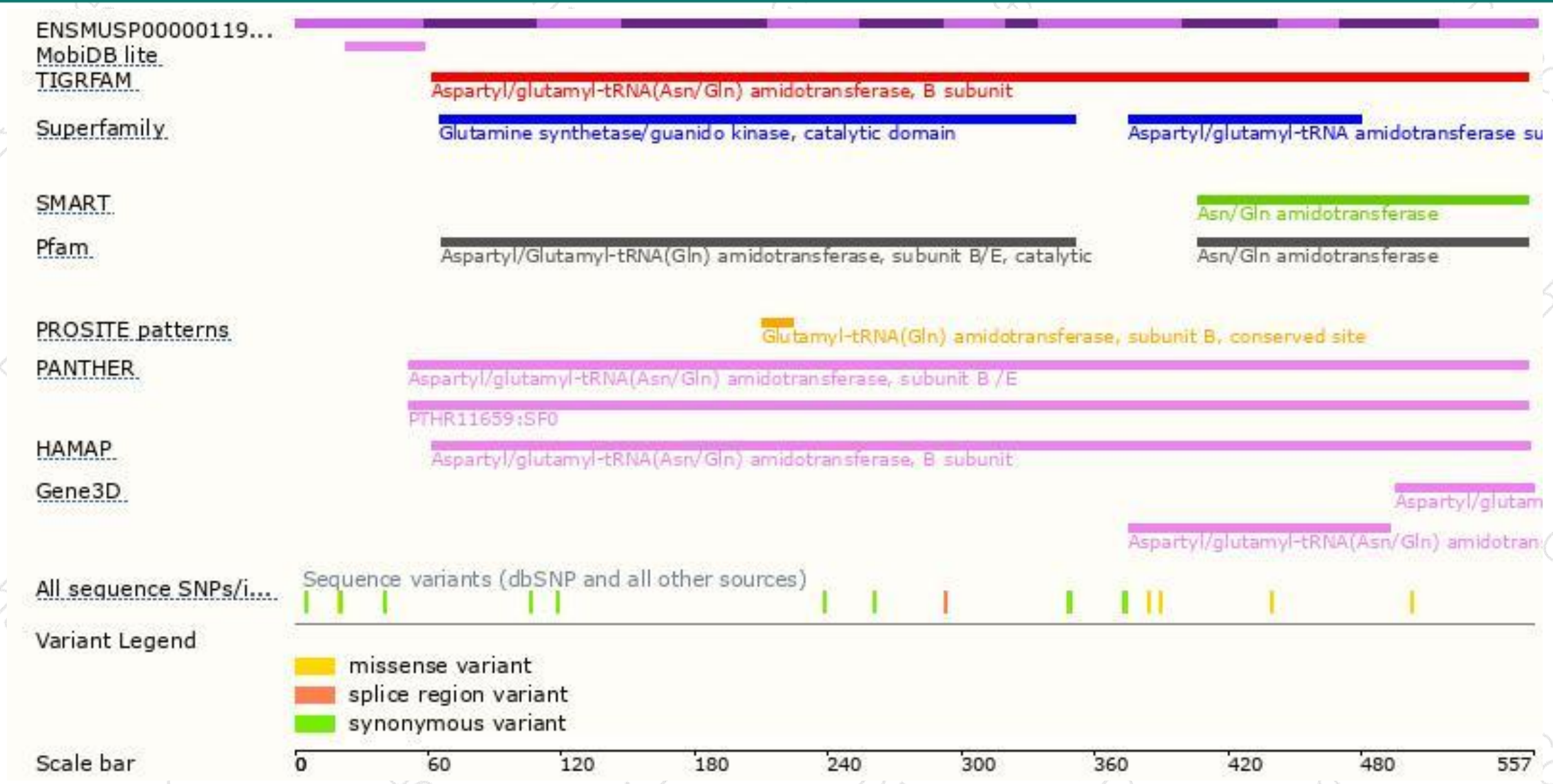
The strategy is based on the design of *Gatb-204* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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