

Gatd3a Cas9-KO Strategy

Designer: Xiaojing Li

Reviewer: JiaYu

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Project Overview

Project Name

Gatd3a

Project type

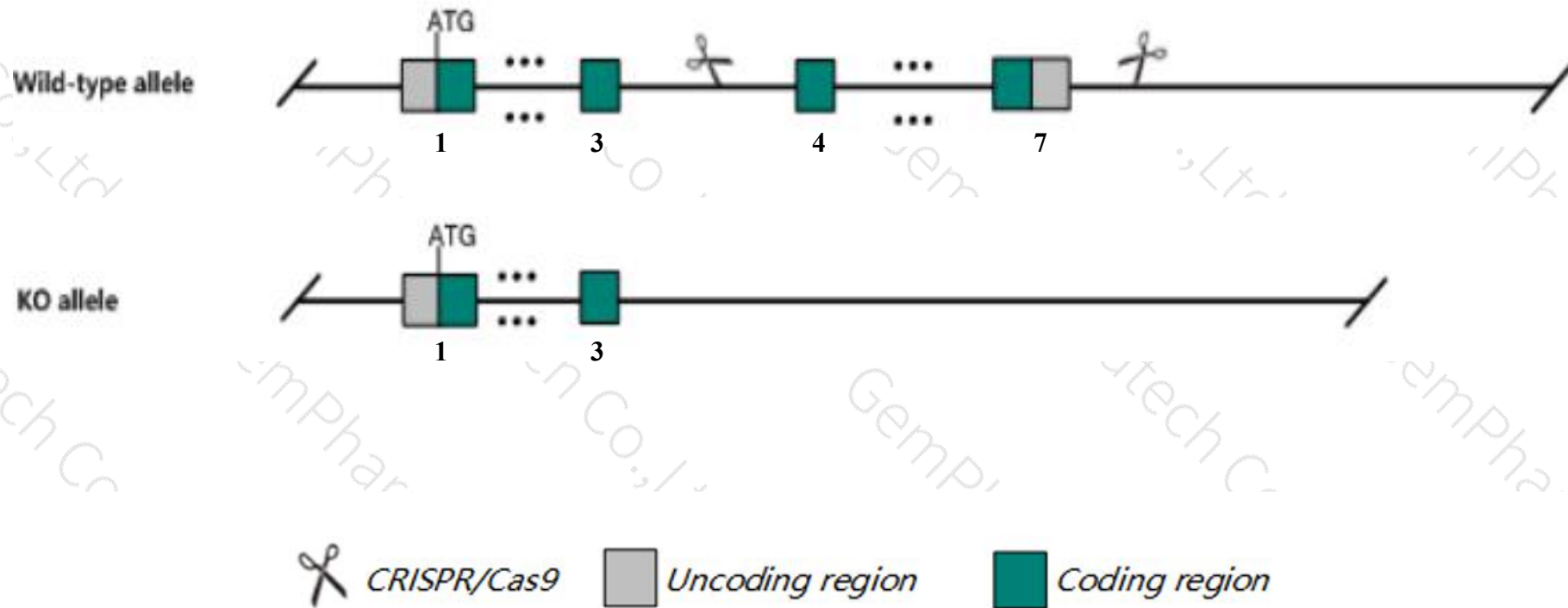
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gatd3a* gene. The schematic diagram is as follows:



- The *Gatd3a* gene has 5 transcripts. According to the structure of *Gatd3a* gene, exon4-exon7 of *Gatd3a-201* (ENSMUST00000001242.8) transcript is recommended as the knockout region. The region contains 500bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Gatd3a* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Gatd3a* gene is located on the Chr10. 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)

Gatd3a glutamine amidotransferase like class 1 domain containing 3A [Mus musculus (house mouse)]

Gene ID: 28295, updated on 13-Mar-2020

Summary



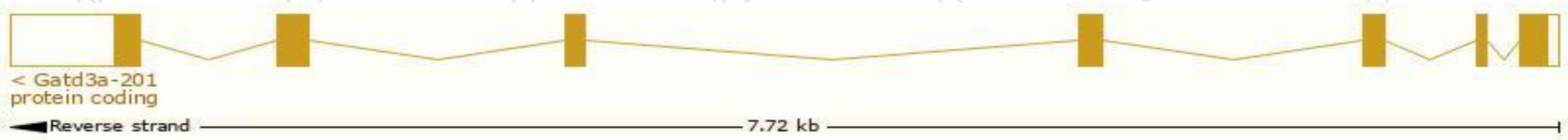
Official Symbol	Gatd3a provided by MGI
Official Full Name	glutamine amidotransferase like class 1 domain containing 3A provided by MGI
Primary source	MGI:MGI:1351861
See related	Ensembl:ENSMUSG00000053329
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	C21orf33, D10Jhu81e, ES1
Expression	Ubiquitous expression in adrenal adult (RPKM 190.1), heart adult (RPKM 107.5) and 27 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

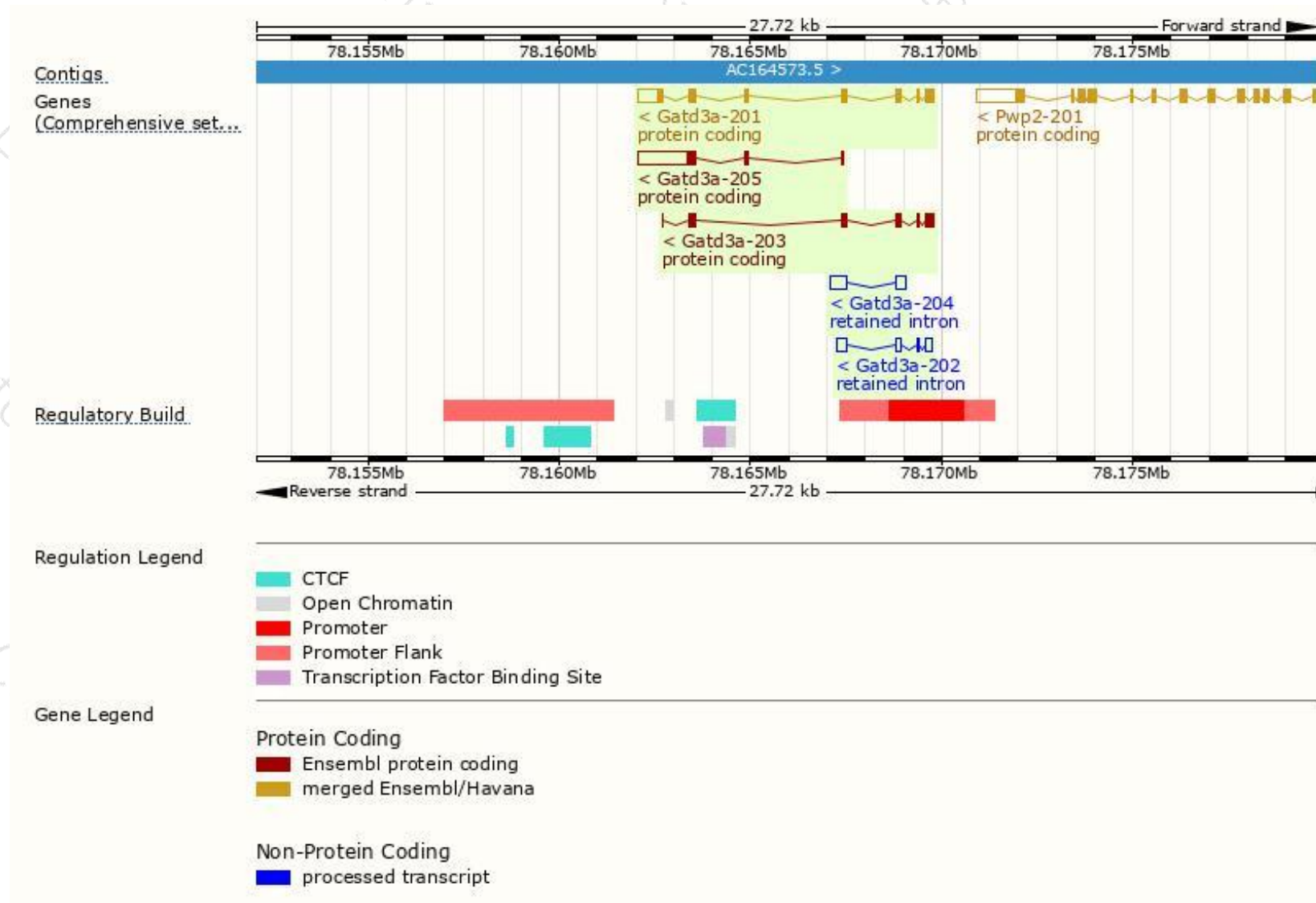
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gatd3a-201	ENSMUST00000001242.8	1378	266aa	Protein coding	CCDS35957	Q9D172	TSL:1 GENCODE basic APPRIS P1
Gatd3a-205	ENSMUST00000220359.1	1620	116aa	Protein coding	-	A0A1W2P870	CDS 5' incomplete TSL:2
Gatd3a-203	ENSMUST00000219120.1	632	195aa	Protein coding	-	A0A1W2P7B6	CDS 3' incomplete TSL:2
Gatd3a-204	ENSMUST00000219504.1	705	No protein	Retained intron	-	-	TSL:3
Gatd3a-202	ENSMUST00000218286.1	568	No protein	Retained intron	-	-	TSL:2

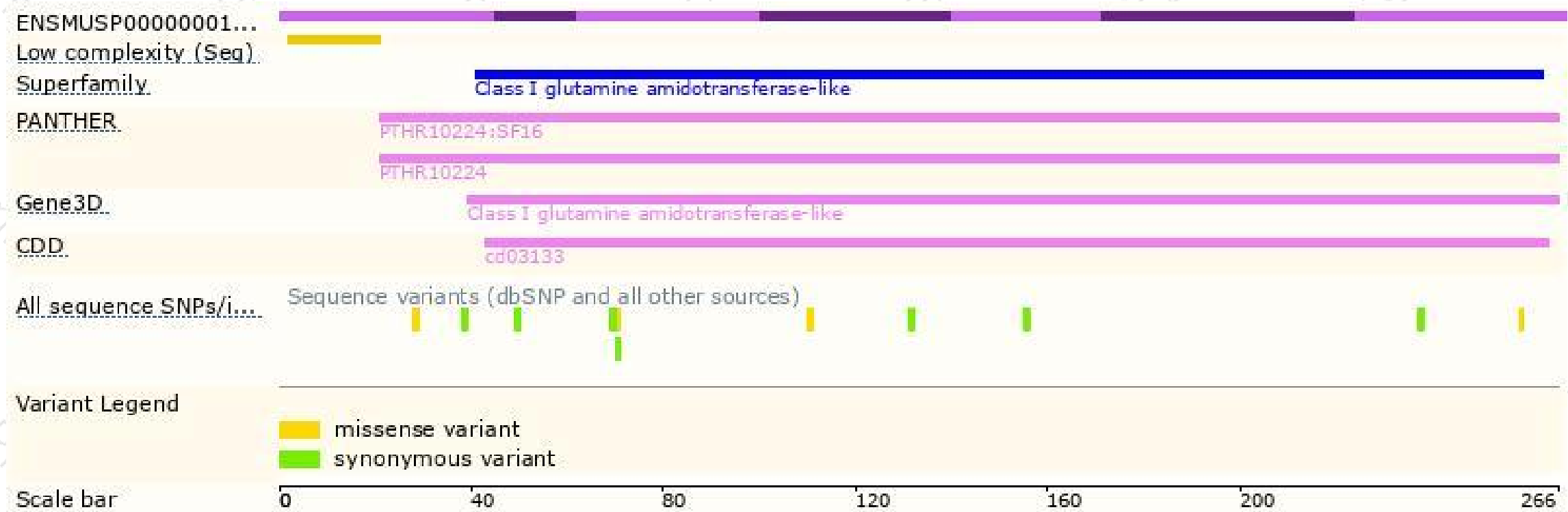
The strategy is based on the design of *Gatd3a-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 400-9660890

