

***Gask1b* Cas9-CKO Strategy**

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Reviewer: JiaYu

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Project Overview

Project Name

Gask1b

Project type

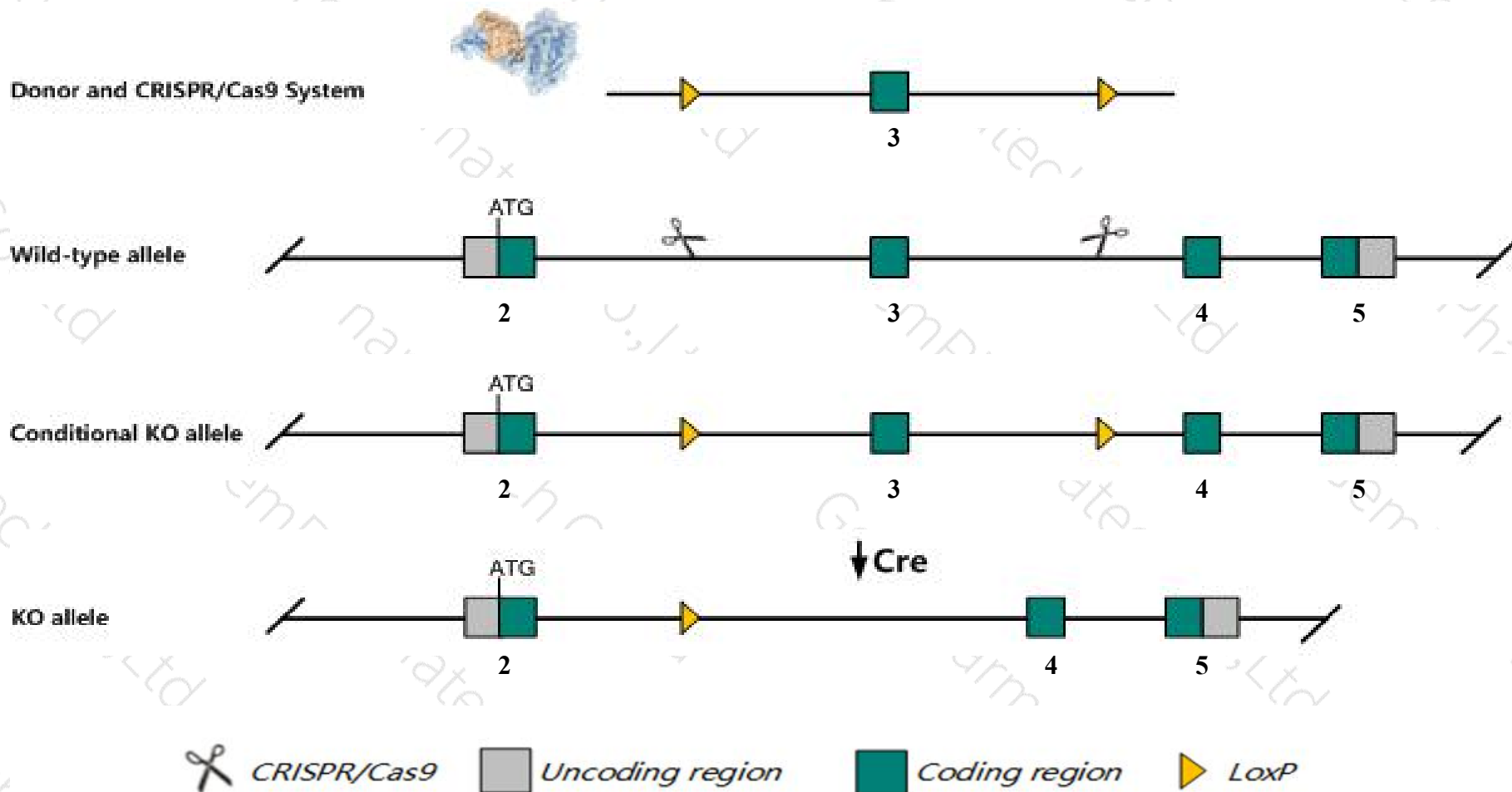
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gask1b* gene. The schematic diagram is as follows:



- The *Gask1b* gene has 5 transcripts. According to the structure of *Gask1b* gene, exon3 of *Gask1b*-202 (ENSMUST00000118853.7) transcript is recommended as the knockout region. The region contains 215bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Gask1b* 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.

- The *Gask1b* 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.
- 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)

Gask1b golgi associated kinase 1B [Mus musculus (house mouse)]

Gene ID: 68659, updated on 13-Mar-2020

Summary



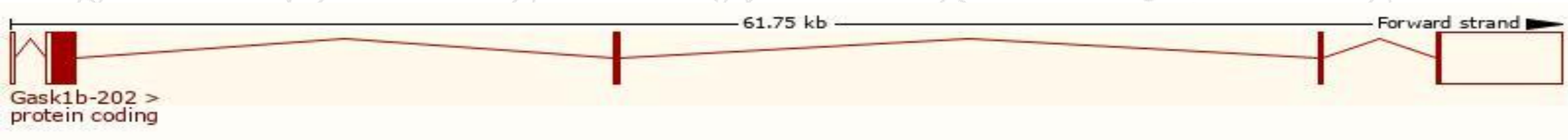
Official Symbol	Gask1b provided by MGI
Official Full Name	golgi associated kinase 1B provided by MGI
Primary source	MGI:MGI:1915909
See related	Ensembl:ENSMUSG00000027955
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1110032E23Rik, 2210419I08Rik, AV011458, Ened, Fam198b, GaskbB
Expression	Broad expression in lung adult (RPKM 6.8), subcutaneous fat pad adult (RPKM 5.7) and 26 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

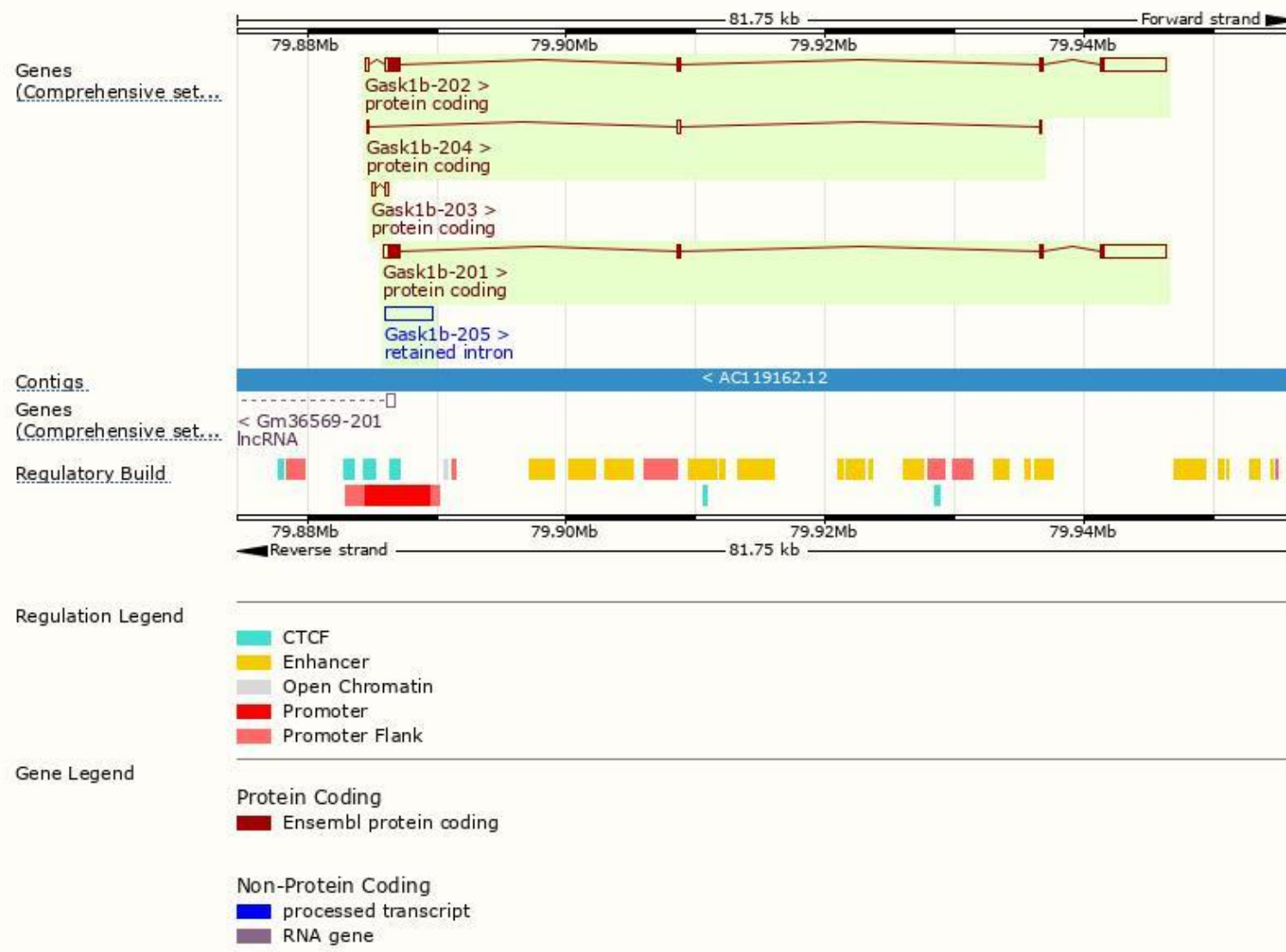
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gask1b-202	ENSMUST00000118853.7	6729	517aa	Protein coding	CCDS17422	Q3UPI1	TSL:5 GENCODE basic APPRIS P1
Gask1b-201	ENSMUST00000029567.8	6627	517aa	Protein coding	CCDS17422	Q3UPI1	TSL:1 GENCODE basic APPRIS P1
Gask1b-203	ENSMUST00000135021.1	552	5aa	Protein coding	-	-	CDS 3' incomplete TSL:3
Gask1b-204	ENSMUST00000145992.1	436	51aa	Protein coding	-	D3YXF7	CDS 3' incomplete TSL:3
Gask1b-205	ENSMUST00000193204.1	3590	No protein	Retained intron	-	-	TSL:NA

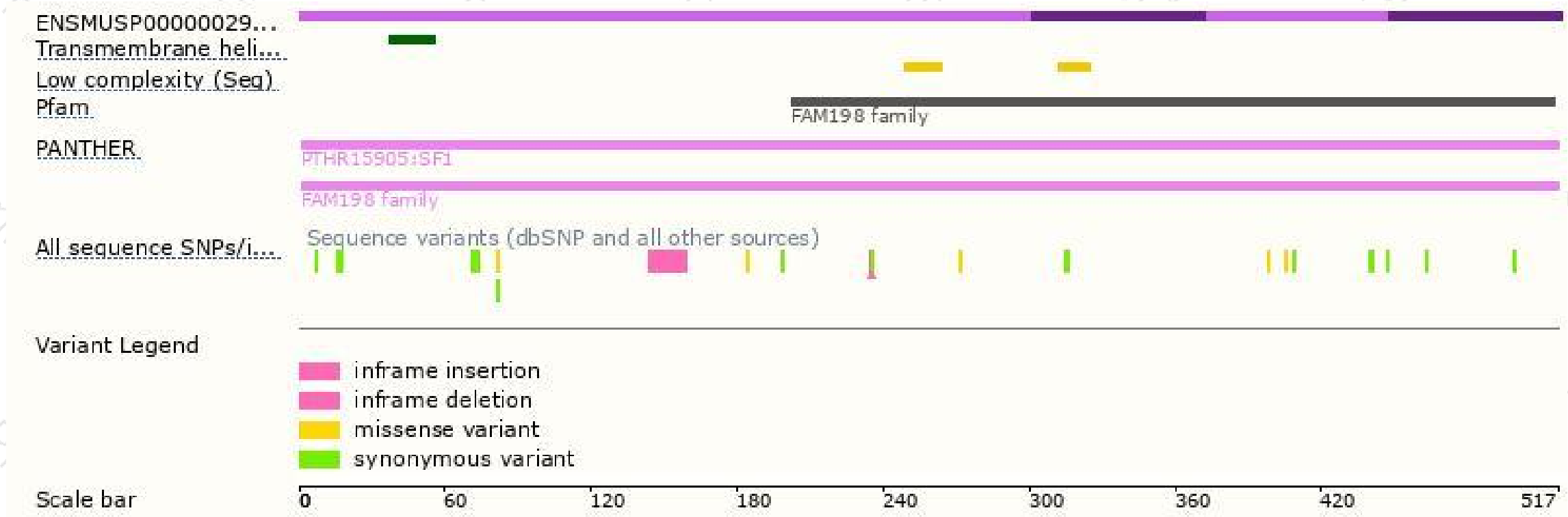
The strategy is based on the design of *Gask1b-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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