

# ***Gab3* Cas9-KO Strategy**

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# Project Overview

**Project Name**

***Gab3***

**Project type**

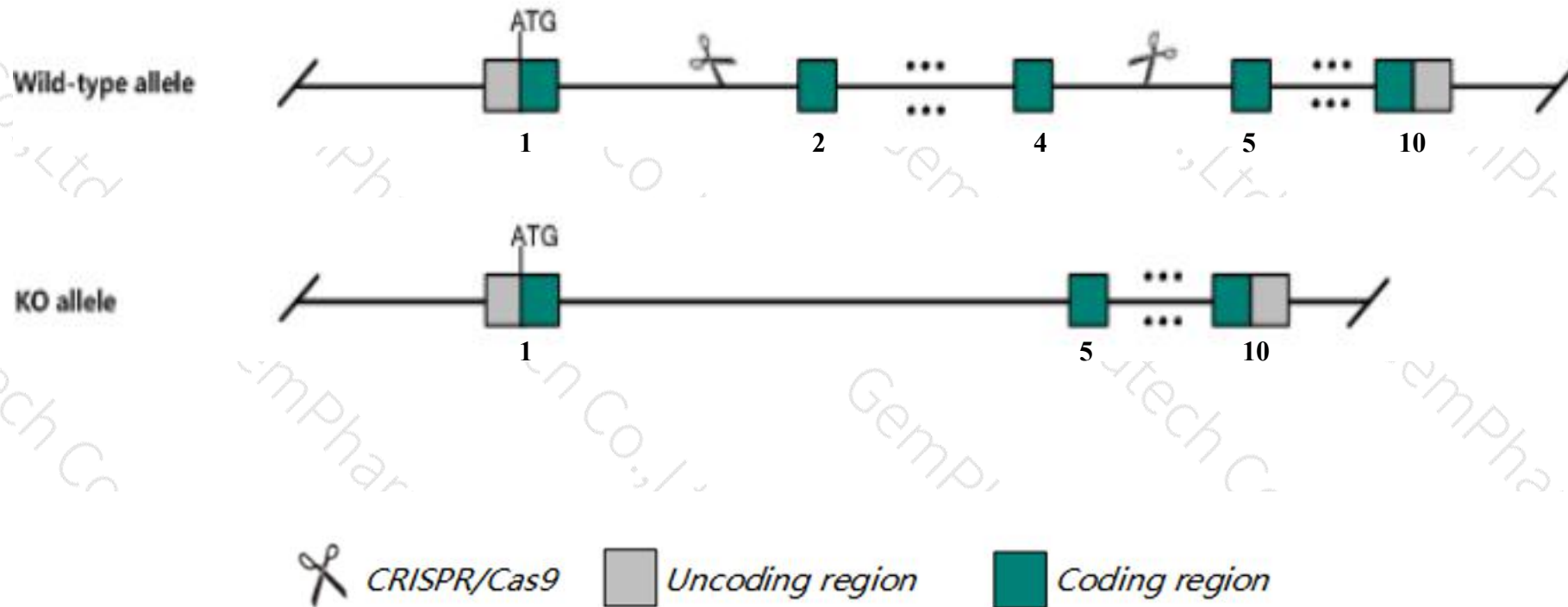
**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gab3* gene. The schematic diagram is as follows:



- The *Gab3* gene has 5 transcripts. According to the structure of *Gab3* gene, exon2-exon4 of *Gab3-201* (ENSMUST00000037374.10) transcript is recommended as the knockout region. The region contains 1000bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Gab3* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Females homozygous and males hemizygous for disruptions in this X-linked gene developed normally, exhibited normal hematopoiesis, and were immunocompetent.
- The *Gab3* gene is located on the ChrX. 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)

## Gab3 growth factor receptor bound protein 2-associated protein 3 [ *Mus musculus* (house mouse) ]

Gene ID: 210710, updated on 12-Aug-2019

### Summary

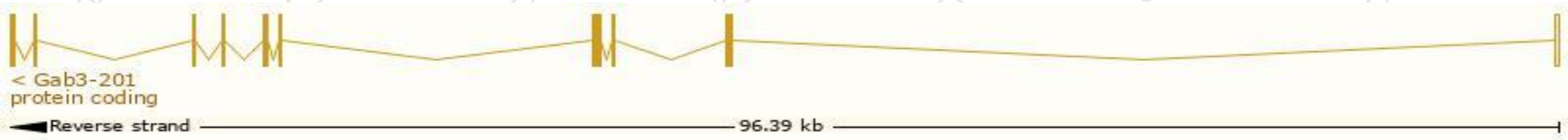
Official Symbol	Gab3 provided by <a href="#">MGI</a>
Official Full Name	growth factor receptor bound protein 2-associated protein 3 provided by <a href="#">MGI</a>
Primary source	<a href="#">MGI:MGI:2387324</a>
See related	<a href="#">Ensembl:ENSMUSG000000032750</a>
Gene type	protein coding
RefSeq status	VALIDATED
Organism	<a href="#">Mus musculus</a>
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	5930433H21Rik
Expression	Ubiquitous expression in spleen adult (RPKM 1.1), mammary gland adult (RPKM 0.8) and 26 other tissues <a href="#">See more</a>
Orthologs	<a href="#">human</a> <a href="#">all</a>

# Transcript information (Ensembl)

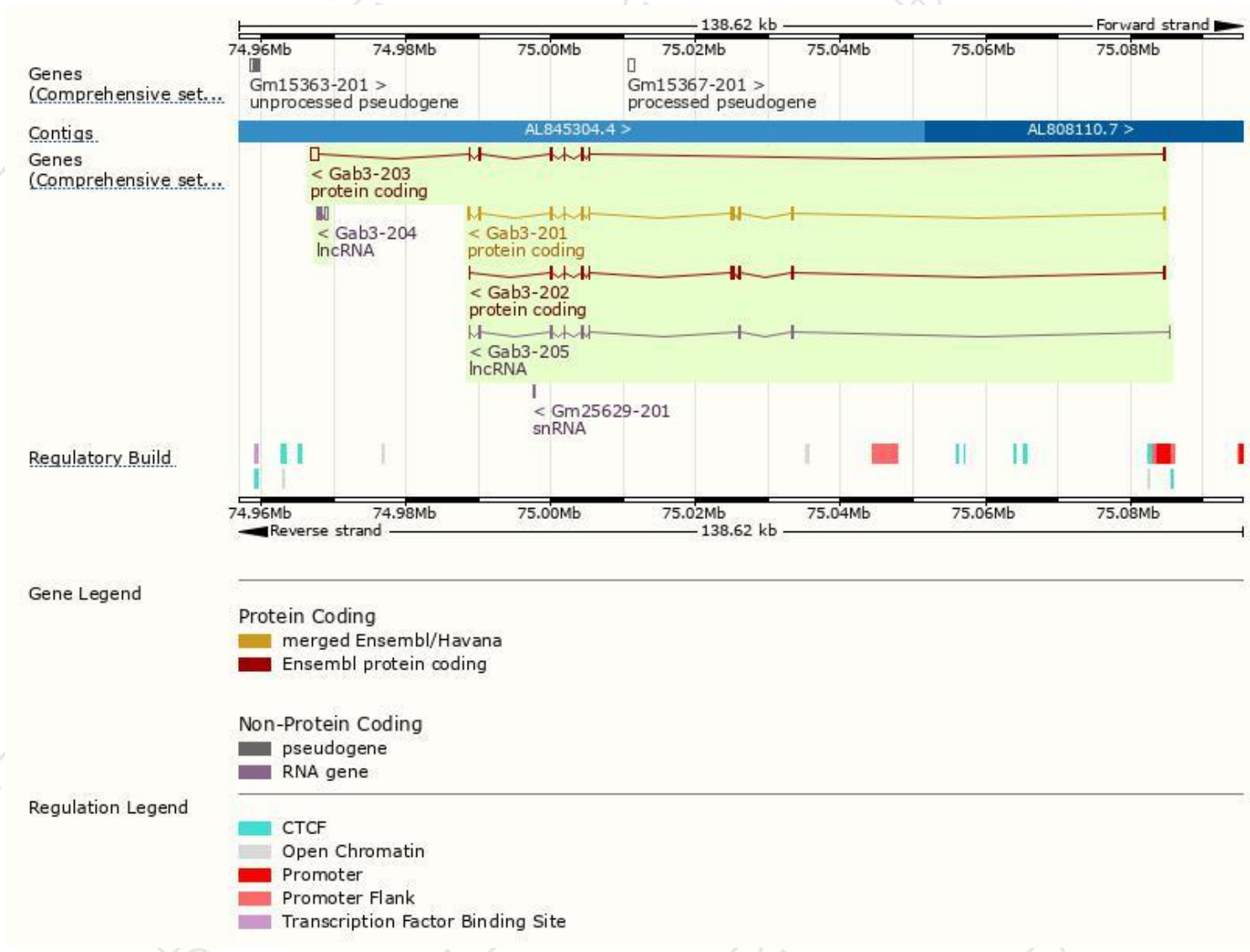
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gab3-201	<a href="#">ENSMUST00000037374.10</a>	2153	<a href="#">595aa</a>	Protein coding	<a href="#">CCDS30235</a>	<a href="#">Q8BSM5</a>	TSL:1 GENCODE basic APPRIS P2
Gab3-203	<a href="#">ENSMUST00000114109.7</a>	2093	<a href="#">244aa</a>	Protein coding	-	<a href="#">Q3V3J9</a>	TSL:2 GENCODE basic
Gab3-202	<a href="#">ENSMUST00000114104.1</a>	1705	<a href="#">556aa</a>	Protein coding	-	<a href="#">B1AYB9</a>	TSL:5 GENCODE basic APPRIS ALT2
Gab3-205	<a href="#">ENSMUST00000129495.1</a>	1300	No protein	lncRNA	-	-	TSL:5
Gab3-204	<a href="#">ENSMUST00000127024.1</a>	750	No protein	lncRNA	-	-	TSL:3

The strategy is based on the design of *Gab3-201* transcript,The transcription is shown below

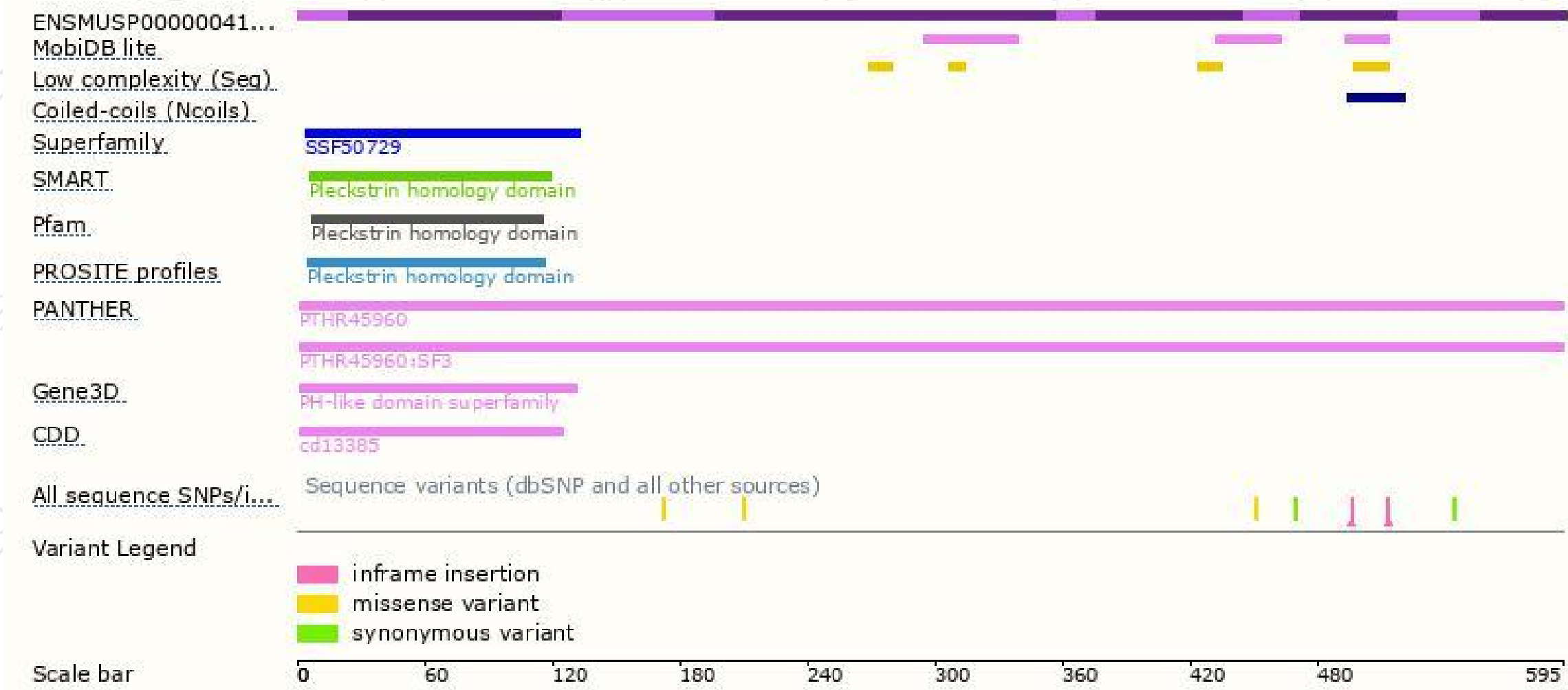


# Genomic location distribution





# Protein domain



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

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