

Golga4 Cas9-KO Strategy

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Project Overview

Project Name

Golga4

Project type

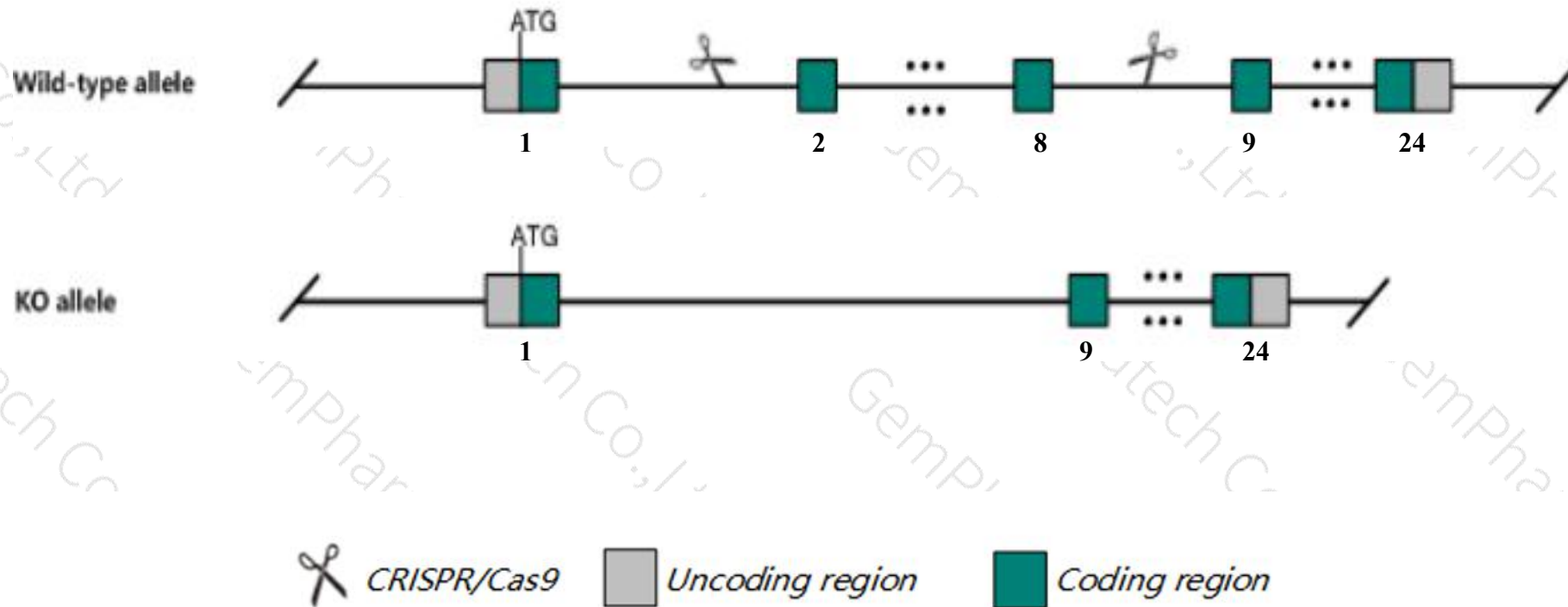
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Golga4* gene. The schematic diagram is as follows:



- The *Golga4* gene has 13 transcripts. According to the structure of *Golga4* gene, exon2-exon8 of *Golga4*-201(ENSMUST00000084820.5) transcript is recommended as the knockout region. The region contains 805bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Golga4* gene. The brief process is as follows: CRISPR/Cas9 system 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 *Golga4* gene is located on the Chr9. 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.
- Transcript 204 CDS 5' incomplete the influences is unknown.
- Transcript 206 CDS 3' incomplete the influences is unknown.
- Transcript 210 CDS 5' and 3' incomplete the influences is unknown.
- 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)

Golga4 golgi autoantigen, golgin subfamily a, 4 [Mus musculus (house mouse)]

Gene ID: 54214, updated on 13-Mar-2020

Summary



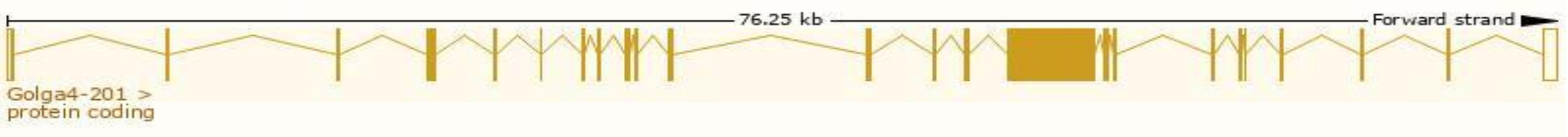
Official Symbol	Golga4 provided by MGI
Official Full Name	golgi autoantigen, golgin subfamily a, 4 provided by MGI
Primary source	MGI:MGI:1859646
See related	Ensembl:ENSMUSG00000038708
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AI225887, AU019508, Olp-1
Expression	Ubiquitous expression in CNS E11.5 (RPKM 6.1), placenta adult (RPKM 5.1) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

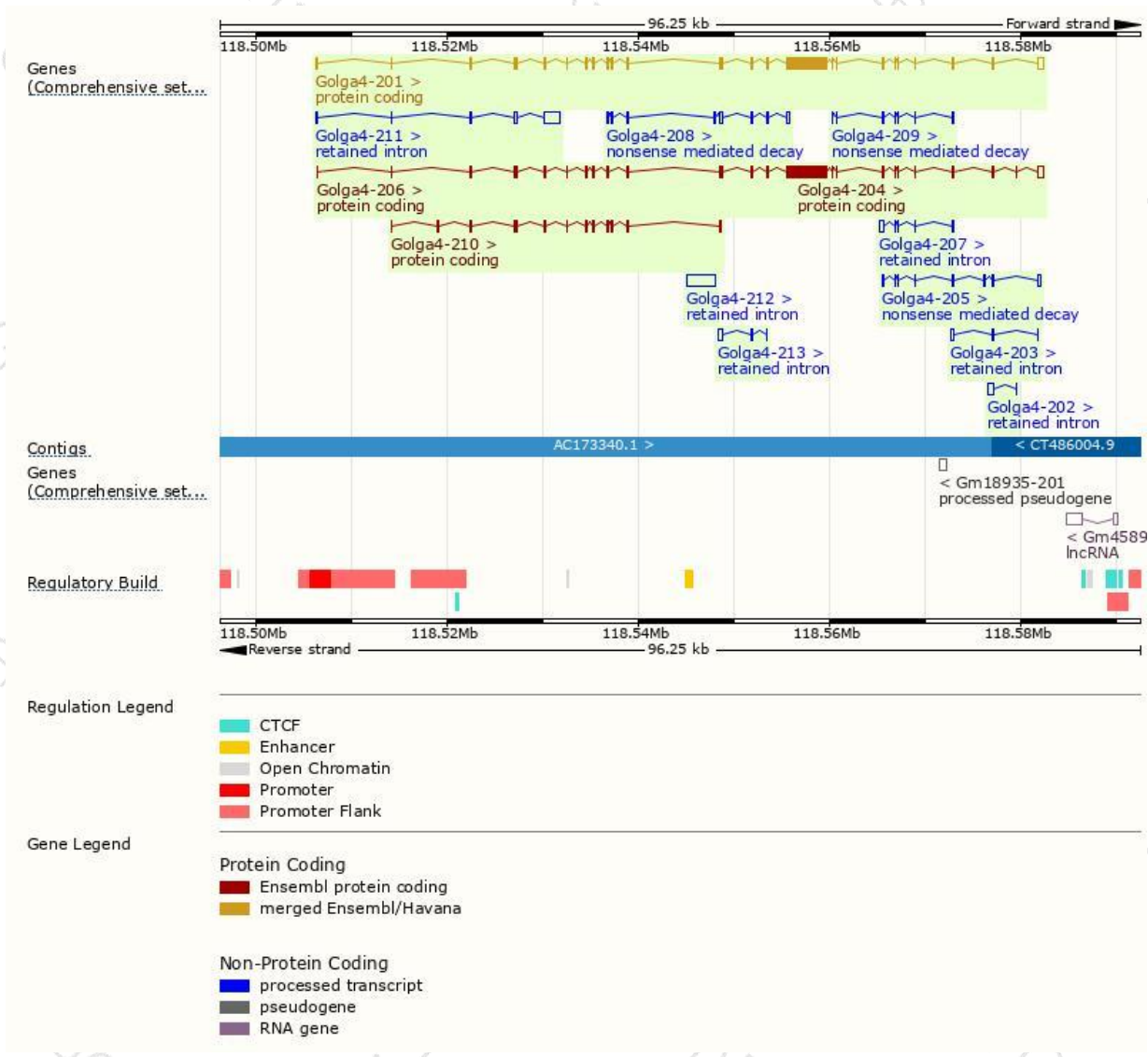
The gene has 13 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Golga4-201	ENSMUST00000084820.5	7583	2238aa	Protein coding	CCDS40801	Q91VW5	TSL:1 GENCODE basic APPRIS P1
Golga4-204	ENSMUST00000211840.1	4461	1251aa	Protein coding	-	A0A1D5RLV4	CDS 5' incomplete TSL:1
Golga4-206	ENSMUST00000212097.1	2858	941aa	Protein coding	-	A0A1D5RME8	CDS 3' incomplete TSL:1
Golga4-210	ENSMUST00000212461.1	1363	454aa	Protein coding	-	A0A1D5RLC6	CDS 5' and 3' incomplete TSL:5
Golga4-208	ENSMUST00000212183.1	1237	111aa	Nonsense mediated decay	-	A0A1D5RM19	CDS 5' incomplete TSL:5
Golga4-205	ENSMUST00000211846.1	796	118aa	Nonsense mediated decay	-	A0A1D5RL95	CDS 5' incomplete TSL:3
Golga4-209	ENSMUST00000212274.1	615	131aa	Nonsense mediated decay	-	A0A1D5RLH4	CDS 5' incomplete TSL:5
Golga4-212	ENSMUST00000212620.1	2963	No protein	Retained intron	-	-	TSL:NA
Golga4-211	ENSMUST00000212593.1	2309	No protein	Retained intron	-	-	TSL:1
Golga4-202	ENSMUST00000211826.1	687	No protein	Retained intron	-	-	TSL:3
Golga4-207	ENSMUST00000212151.1	611	No protein	Retained intron	-	-	TSL:2
Golga4-213	ENSMUST00000212913.1	582	No protein	Retained intron	-	-	TSL:3
Golga4-203	ENSMUST00000211838.1	362	No protein	Retained intron	-	-	TSL:2

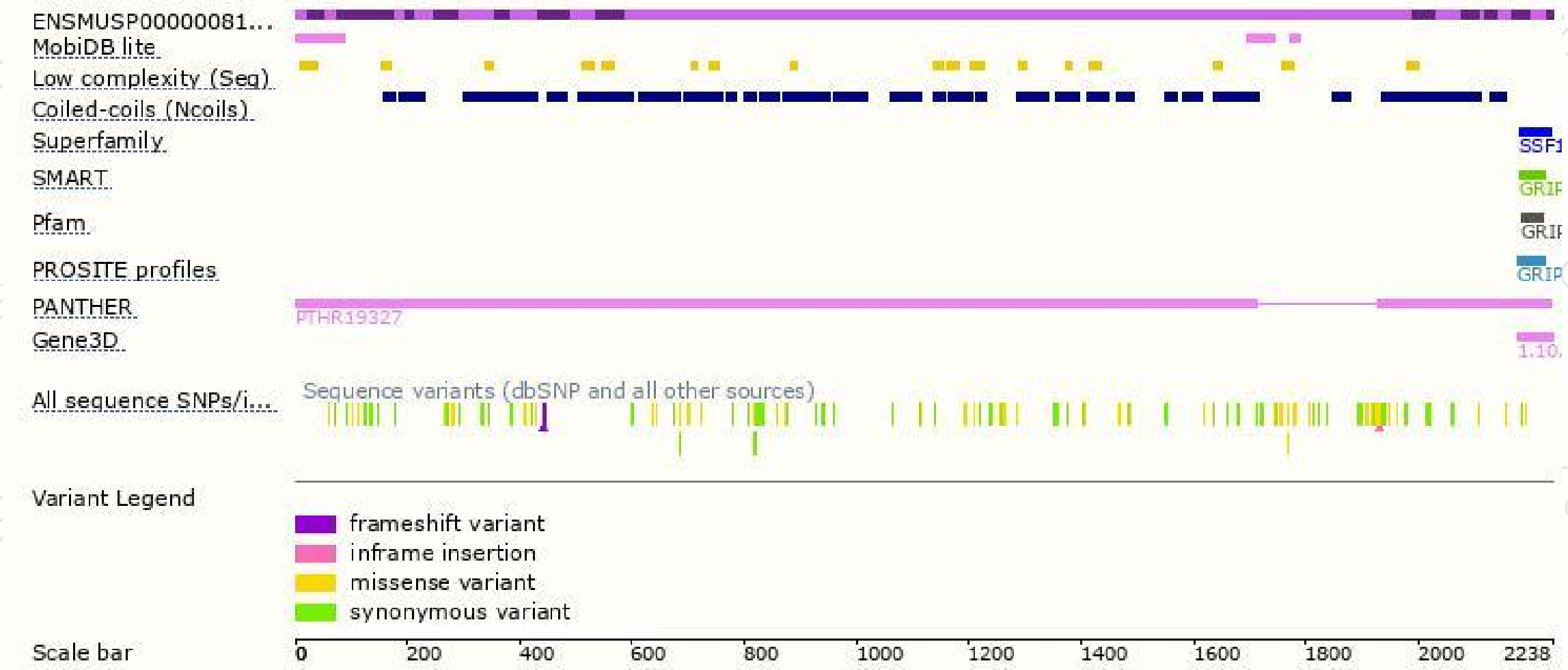
The strategy is based on the design of *Golga4-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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