

***Gosr2* Cas9-KO Strategy**

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Project Overview

Project Name

Gosr2

Project type

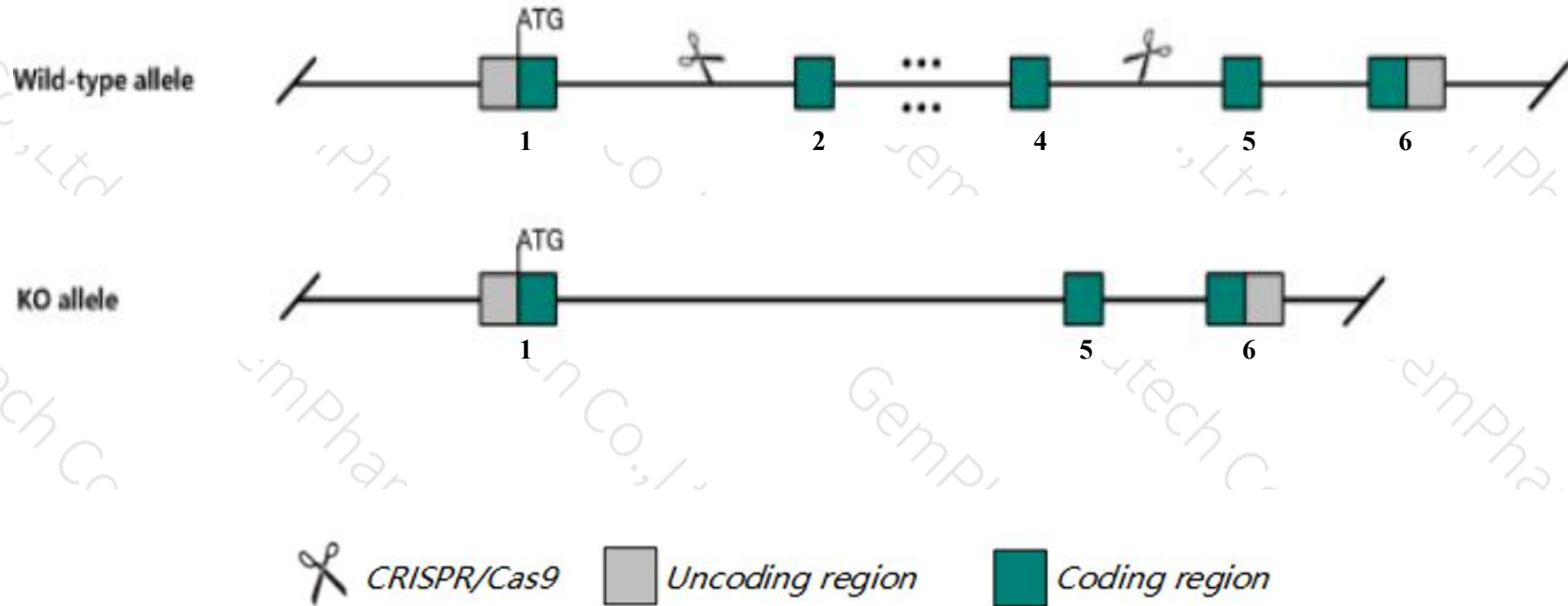
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gosr2* gene. The schematic diagram is as follows:



Technical routes

- The *Gosr2* gene has 3 transcripts. According to the structure of *Gosr2* gene, exon2-exon4 of *Gosr2*-201(ENSMUST00000021329.13) transcript is recommended as the knockout region. The region contains 307bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Gosr2* 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 *Gosr2* gene is located on the Chr11. 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)

Gosr2 golgi SNAP receptor complex member 2 [Mus musculus (house mouse)]

Gene ID: 56494, updated on 13-Mar-2020

Summary



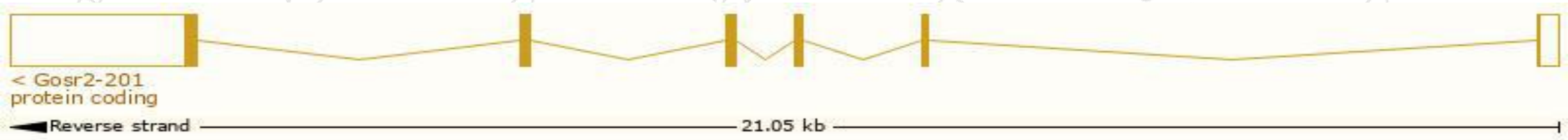
Official Symbol	Gosr2 provided by MGI
Official Full Name	golgi SNAP receptor complex member 2 provided by MGI
Primary source	MGI:MGI:1927204
See related	Ensembl:ENSMUSG00000020946
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2310032N09Rik, C76855, Gs27, SNARE, membrin
Expression	Ubiquitous expression in testis adult (RPKM 36.5), genital fat pad adult (RPKM 36.3) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

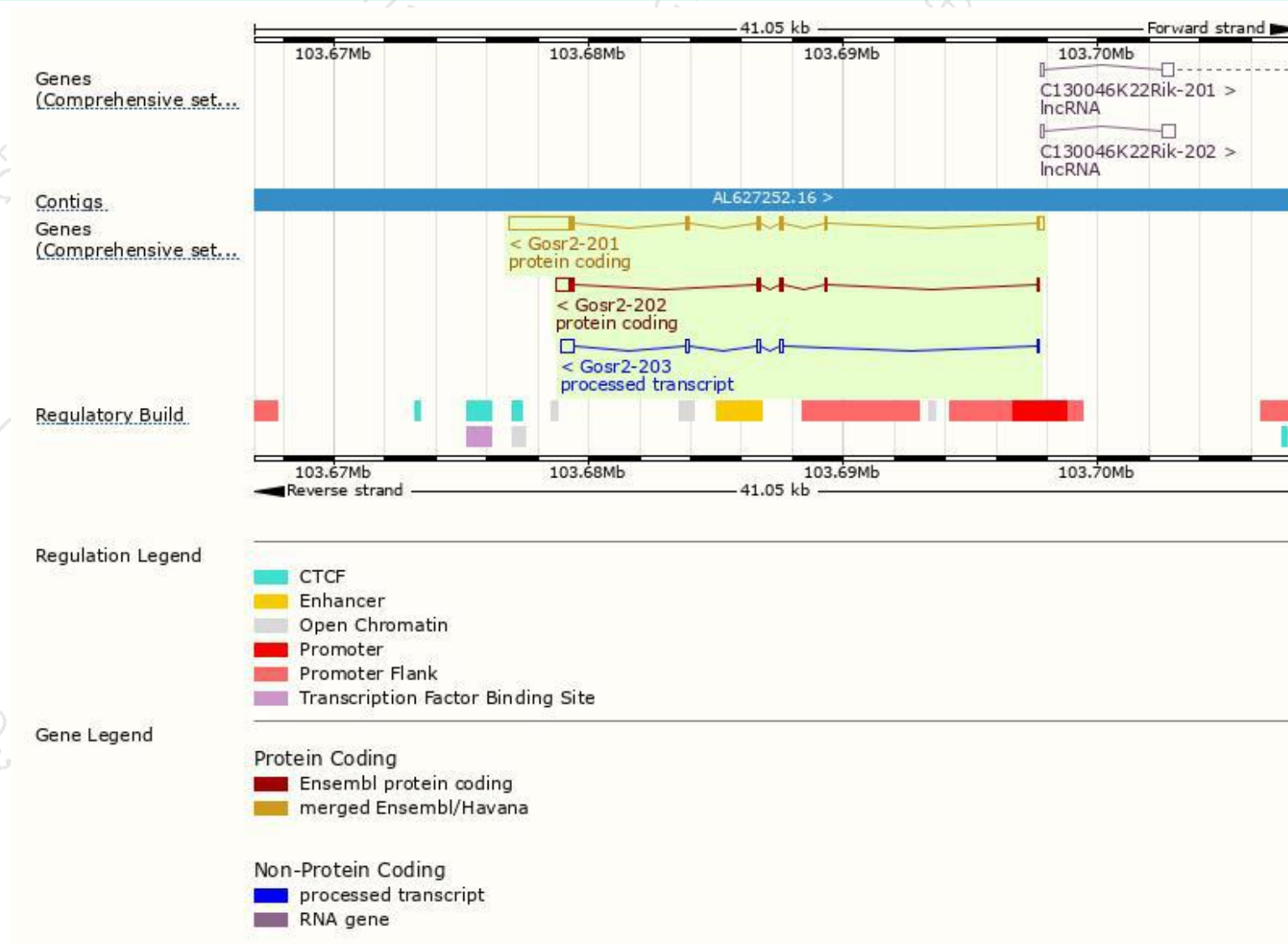
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gosr2-201	ENSMUST00000021329.13	3266	212aa	Protein coding	CCDS25521	O35166	TSL:1 GENCODE basic APPRIS P1
Gosr2-202	ENSMUST00000107013.2	1044	165aa	Protein coding	-	A2A9I0	TSL:2 GENCODE basic
Gosr2-203	ENSMUST00000145265.1	917	No protein	Processed transcript	-	-	TSL:2

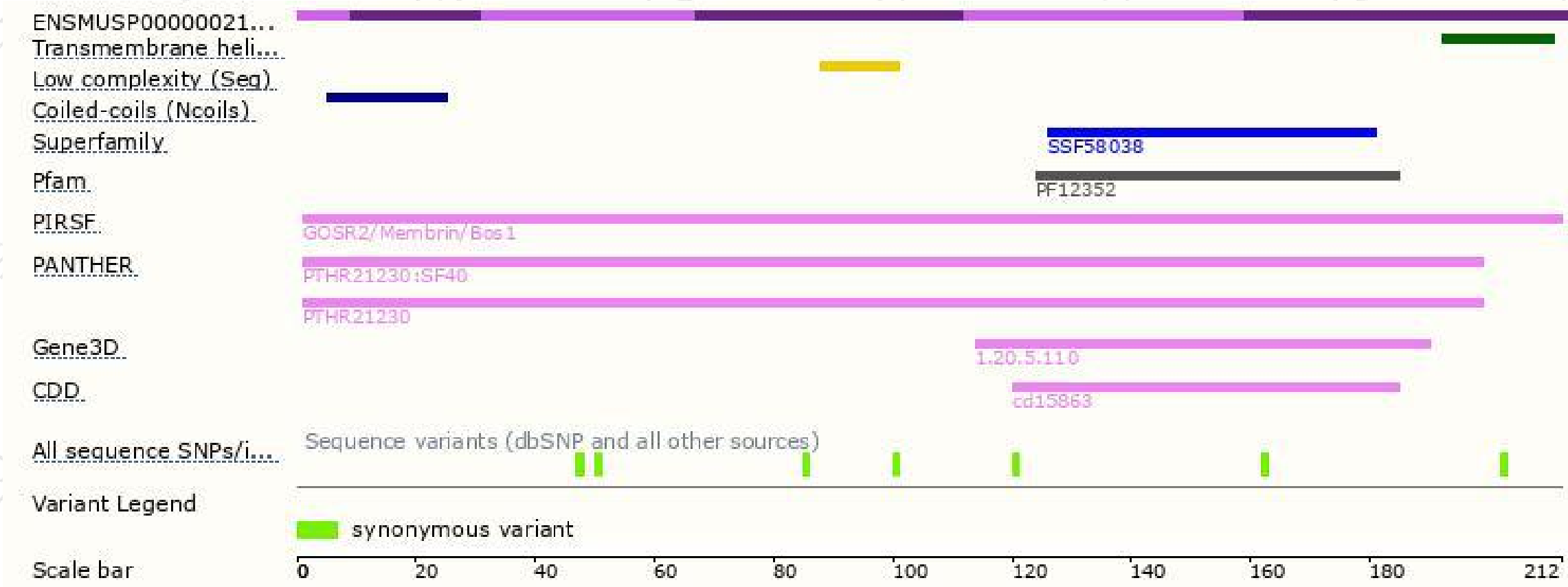
The strategy is based on the design of *Gosr2-201* transcript,the transcription is shown below:



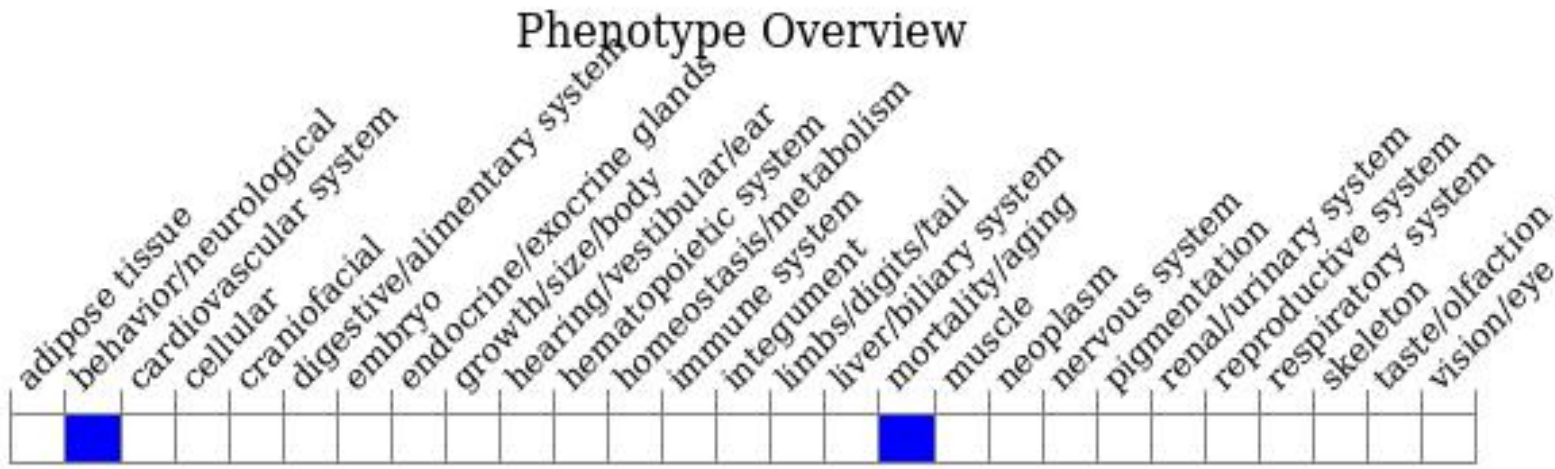
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue.Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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