

Gypc Cas9-CKO Strategy

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Project Overview

Project Name

Gypc

Project type

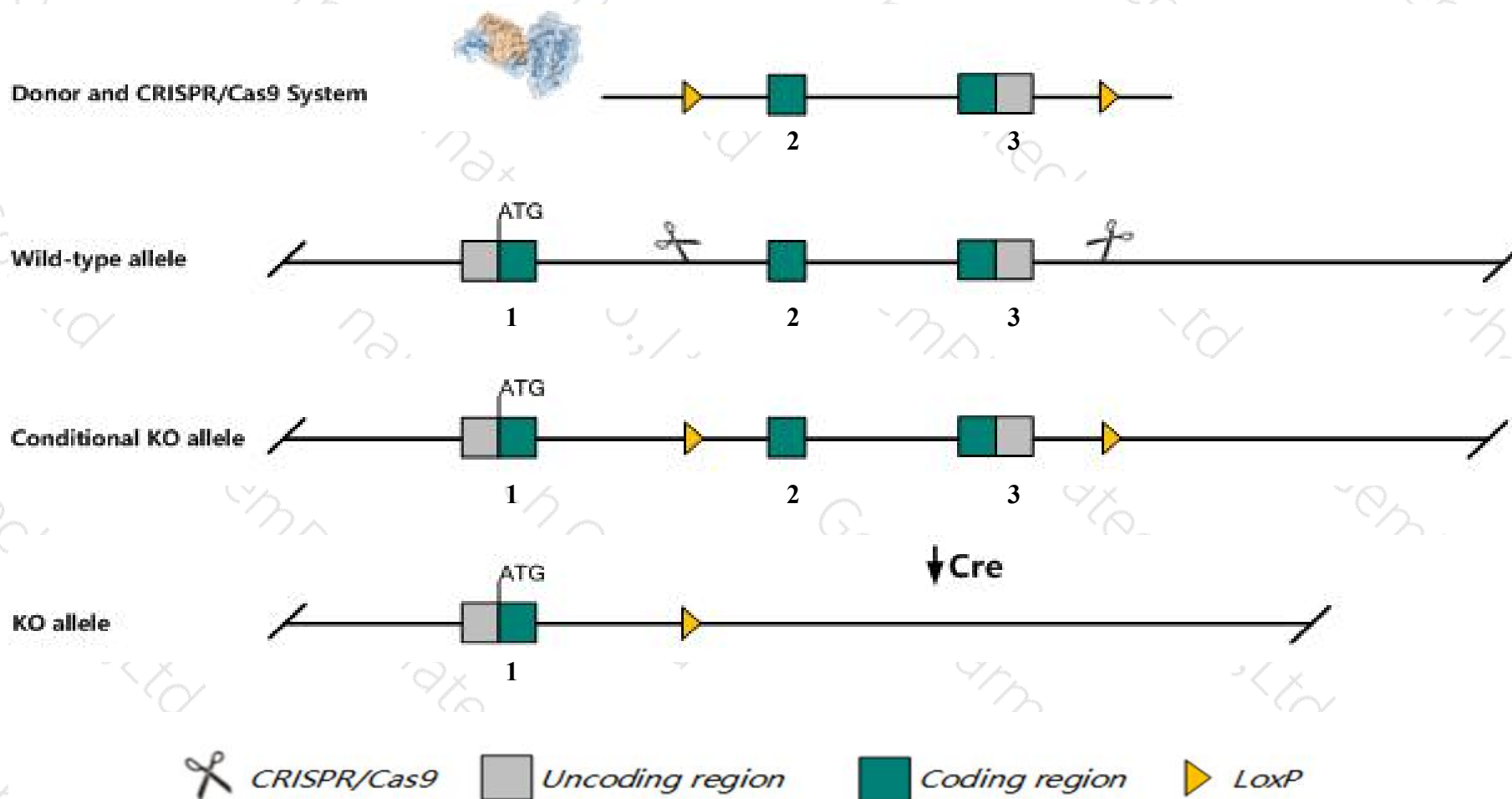
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

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



Technical routes

- The *Gypc* gene has 3 transcripts. According to the structure of *Gypc* gene, exon2-exon3 of *Gypc*-203(ENSMUST00000174459.1) transcript is recommended as the knockout region. The region contains 248bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Gypc* 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.

Notice

- The *Gypc* gene is located on the Chr18. 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)

Gypc glycophorin C [Mus musculus (house mouse)]

Gene ID: 71683, updated on 13-Mar-2020

Summary



Official Symbol [Gypc](#) provided by [MGI](#)

Official Full Name [glycophorin C](#) provided by [MGI](#)

Primary source [MGI:MGI:1098566](#)

See related [Ensembl:ENSMUSG00000090523](#)

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 [0610037F22Rik](#), [Cd236r](#)

Expression Broad expression in liver E14.5 (RPKM 29.8), liver E14 (RPKM 27.7) and 17 other tissues [See more](#)

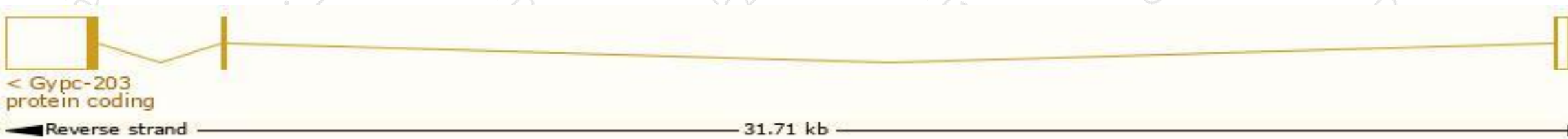
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

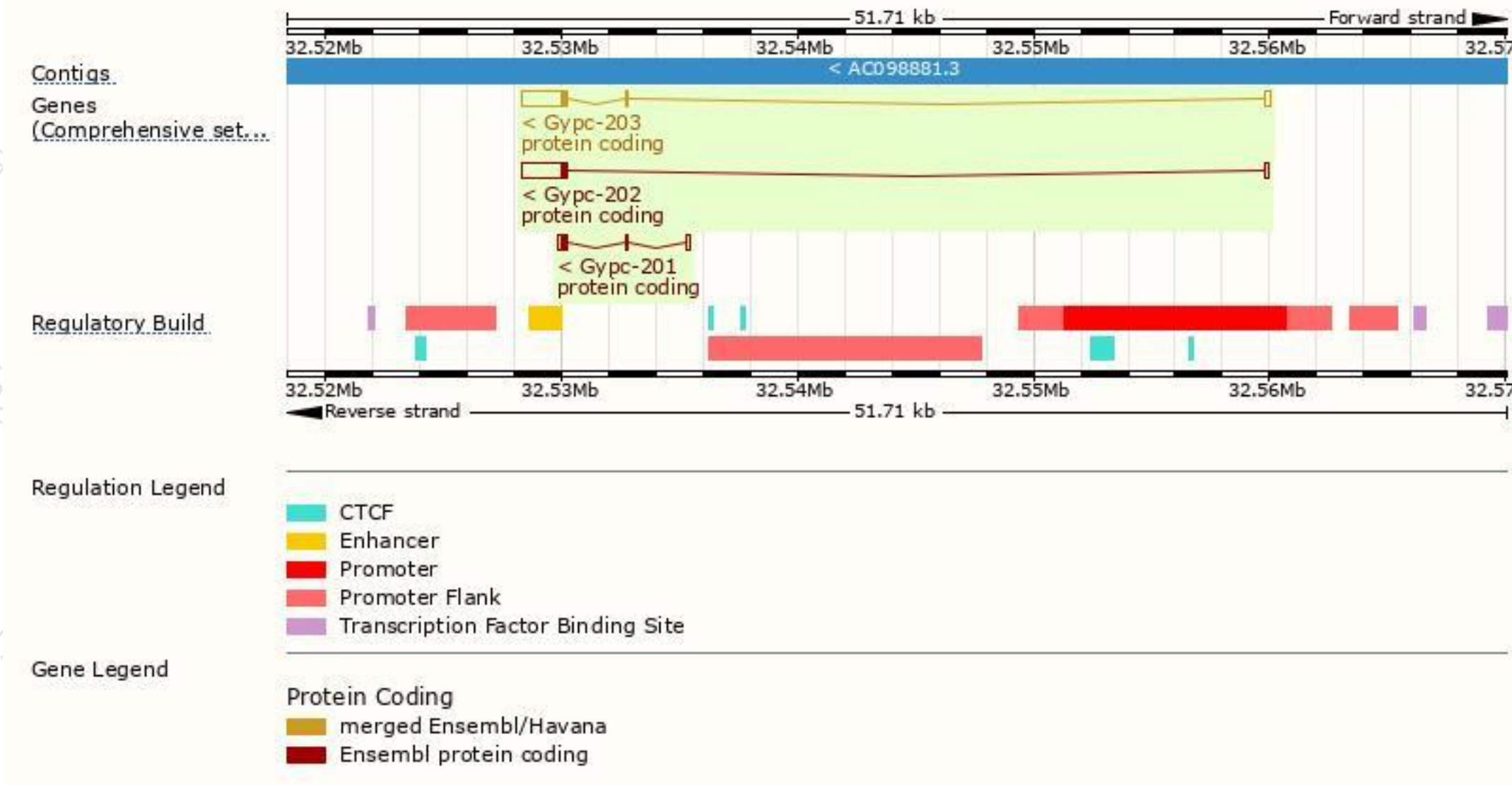
The gene has 3 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gypc-203	ENSMUST00000174459.1	2180	95aa	Protein coding	CCDS57118	Q78HU7	TSL:1 GENCODE basic APPRIS P3
Gypc-202	ENSMUST00000174000.1	2072	78aa	Protein coding	CCDS84368	G3UXY6	TSL:3 GENCODE basic APPRIS ALT2
Gypc-201	ENSMUST00000172434.2	612	72aa	Protein coding	-	F7D1I5	TSL:5 GENCODE basic APPRIS ALT2

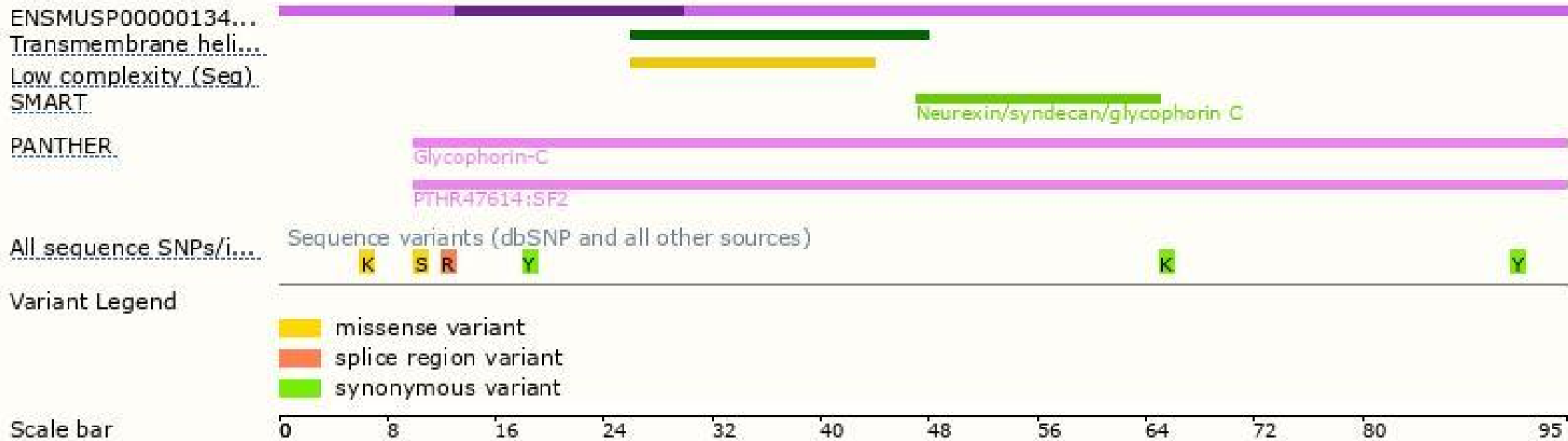
The strategy is based on the design of *Gypc-203* transcript, the transcription is shown below:



Genomic location distribution



Protein domain



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

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