

Galnt10 Cas9-CKO Strategy

Designer:

JiaYu

Reviewer:

Xiaojing Li

Design Date:

2020-3-4

Project Overview

Project Name

Galnt10

Project type

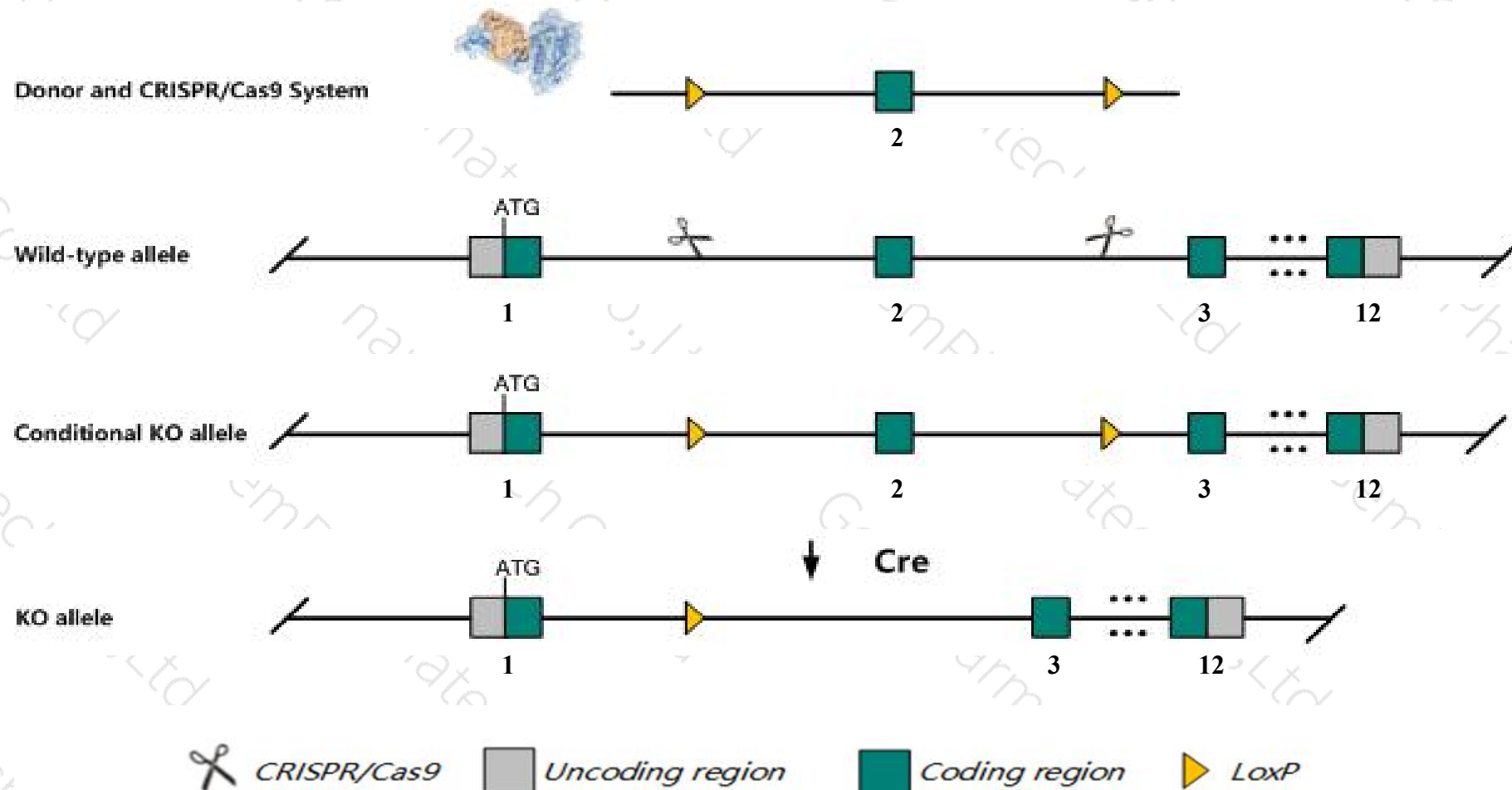
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Galnt10* gene. The schematic diagram is as follows:



Technical routes

- The *Galnt10* gene has 2 transcripts. According to the structure of *Galnt10* gene, exon2 of *Galnt10-201* (ENSMUST00000066987.13) transcript is recommended as the knockout region. The region contains 103bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Galnt10* 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.

- According to the existing MGI data, Mice homozygous for a disruption in this gene display a normal phenotype.
- The *Galnt10* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Galnt10 polypeptide N-acetylgalactosaminyltransferase 10 [Mus musculus (house mouse)]

Gene ID: 171212, updated on 31-Jan-2019

Summary



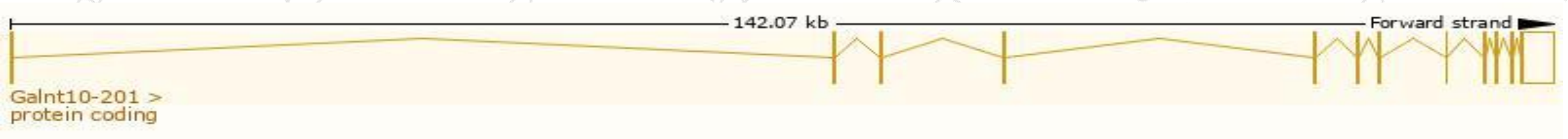
Official Symbol	Galnt10 provided by MGI
Official Full Name	polypeptide N-acetylgalactosaminyltransferase 10 provided by MGI
Primary source	MGI:MGI:1890480
See related	Ensembl:ENSMUSG00000020520
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AU018154, C330012K04Rik, GalNAc-T10, GalNAc-T9, Galnt9, ppGaNTase
Expression	Ubiquitous expression in colon adult (RPKM 25.4), large intestine adult (RPKM 14.7) and 27 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

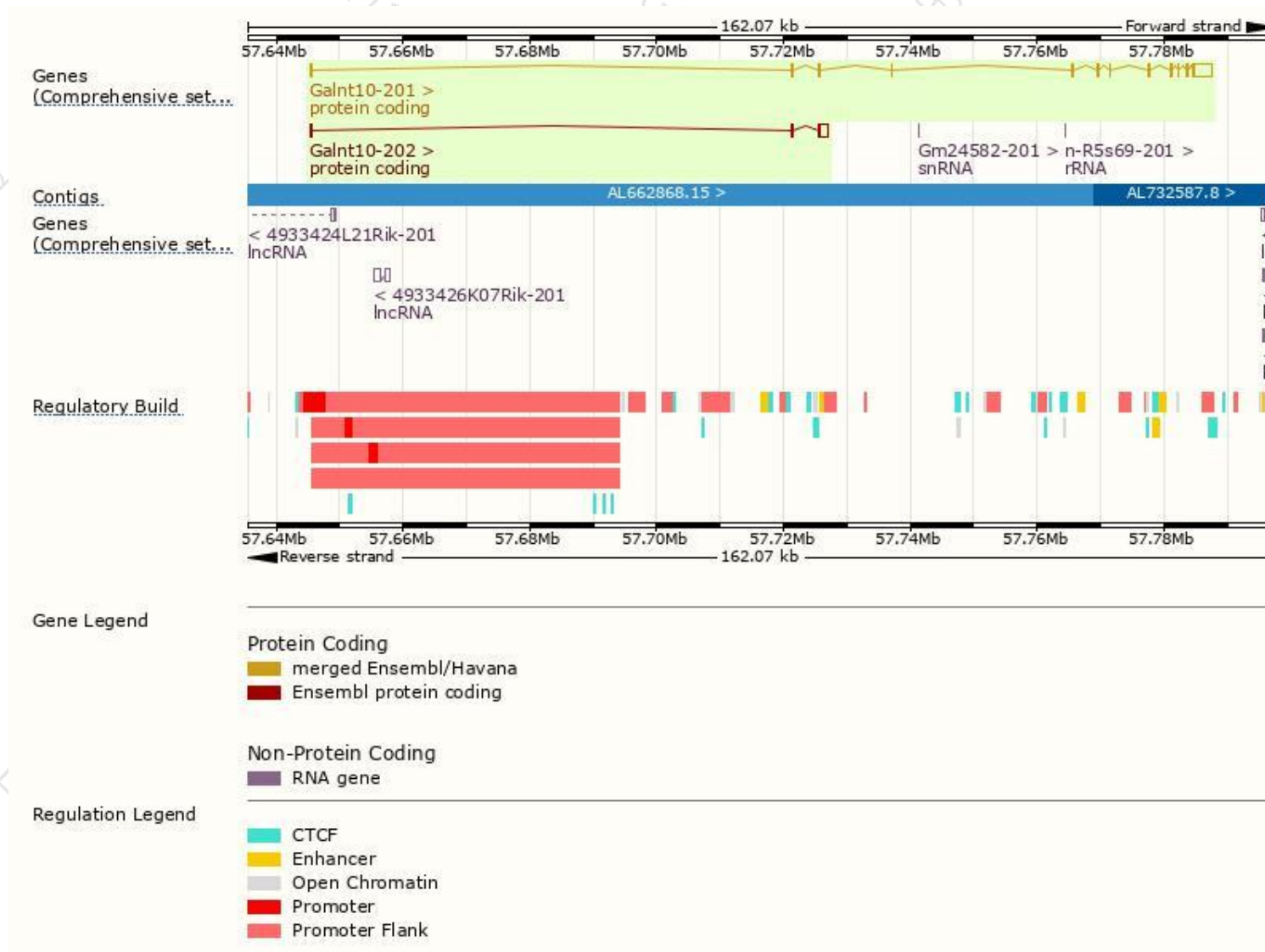
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Galnt10-201	ENSMUST00000066987.13	4715	603aa	Protein coding	CCDS24719	Q5SQF9 Q6P9S7	TSL:1 GENCODE basic APPRIS P1
Galnt10-202	ENSMUST00000108846.1	1745	134aa	Protein coding	-	Q5ST18	TSL:1 GENCODE basic

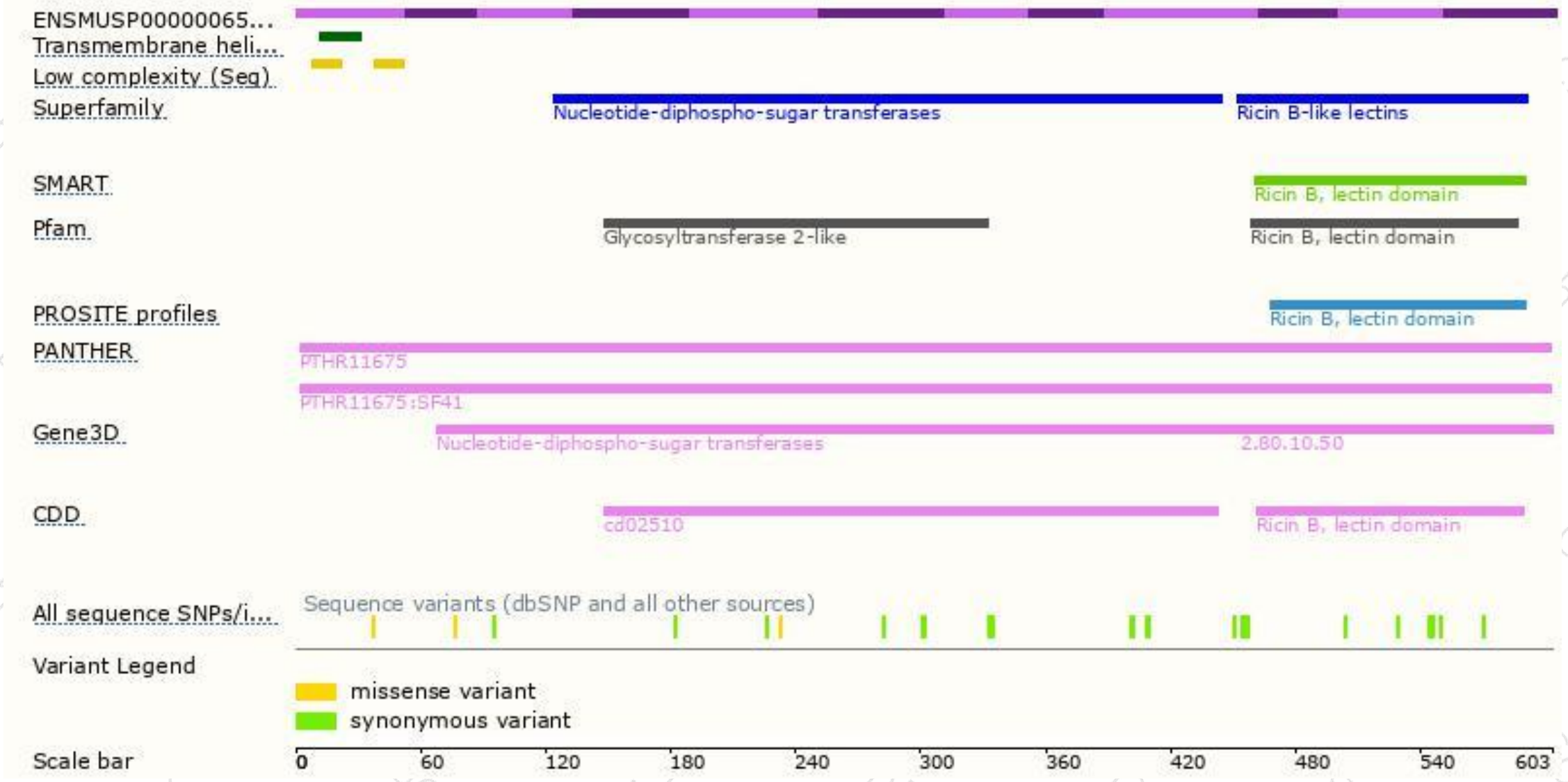
The strategy is based on the design of *Galnt10-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

