Galnt5 Cas9-KO Strategy

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Project Overview

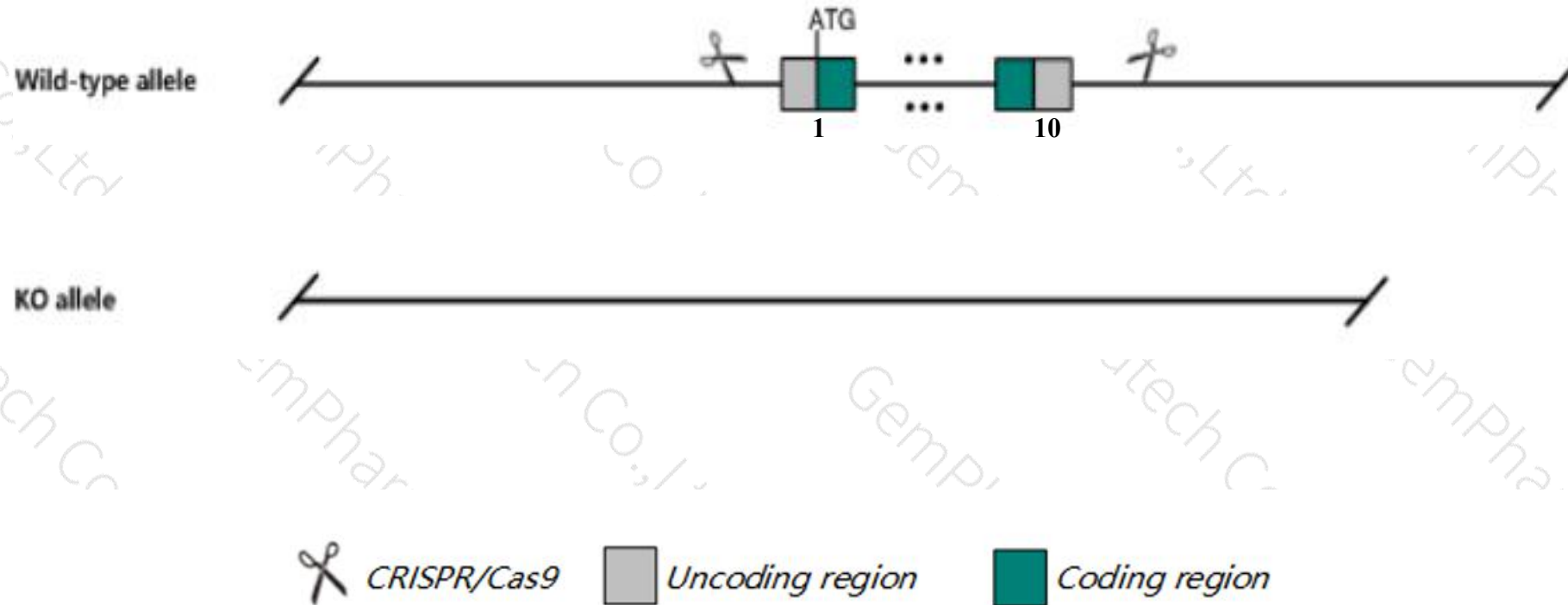|	
Project Name	***Galnt5***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Galnt5* gene. The schematic diagram is as follows:

Technical routes

➤ The *Galnt5* gene has 3 transcripts. According to the structure of *Galnt5* gene, exon1-exon10 of *Galnt5-201* (ENSMUST00000112616.7) transcript is recommended as the knockout region.The region contains all of the coding sequence.Knock out the region will result in disruption of protein function.

➤ In this project we use CRISPR/Cas9 technology to modify *Galnt5* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

➢ According to the existing MGI data,An unpublished knockout mutation is reported to have no overt phenotypic consequences.

➢ The *Galnt5* gene is located on the Chr2. 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）

Galnt5 polypeptide N-acetylgalactosaminyltransferase 5 [*Mus musculus* (house mouse)]

Gene ID: 241391, updated on 13-Mar-2020

▲ Summary

Official Symbol	Galnt5 provided by MGI
Official Full Name	polypeptide N-acetylgalactosaminyltransferase 5 provided by MGI
Primary source	MGI:MGI:2179403
See related	Ensembl:ENSMUSG00000026828
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	4832424J23
Expression	Low expression observed in reference dataset See more
Orthologs	human all

▲ Genomic context

Location: 2; 2 C1.1
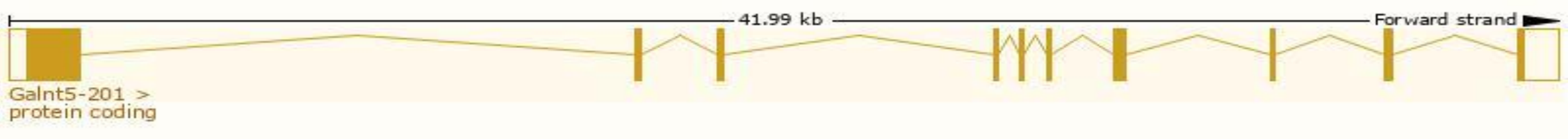
Exon count: 11

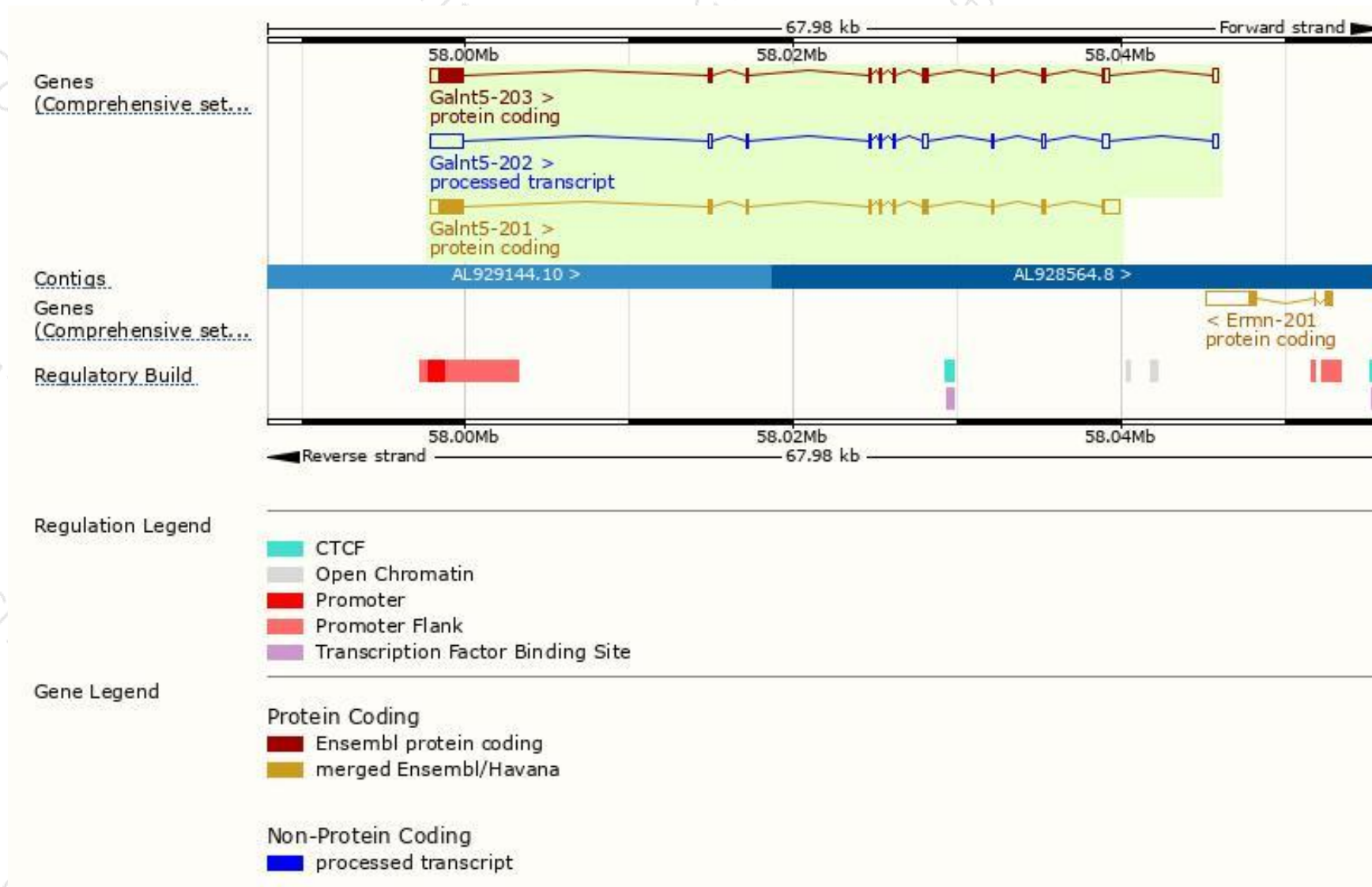See Galnt5 in Genome Data Viewer

Transcript information（Ensembl）

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

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Galnt5-201	ENSMUST00000112616.7	4225	930aa	Protein coding	CCDS38125	Q8C102	TSL:1 GENCODE basic APPRIS is a system to annotate alternatively spliced transcripts based on a range of computational methods to identify the most functionally important transcript(s) of a gene. APPRIS P1
Galnt5-203	ENSMUST00000166729.1	3812	930aa	Protein coding	CCDS38125	Q8C102	TSL:2 GENCODE basic APPRIS is a system to annotate alternatively spliced transcripts based on a range of computational methods to identify the most functionally important transcript(s) of a gene. APPRIS P1
Galnt5-202	ENSMUST00000144671.7	3812	No protein	Processed transcript	-	-	TSL:2

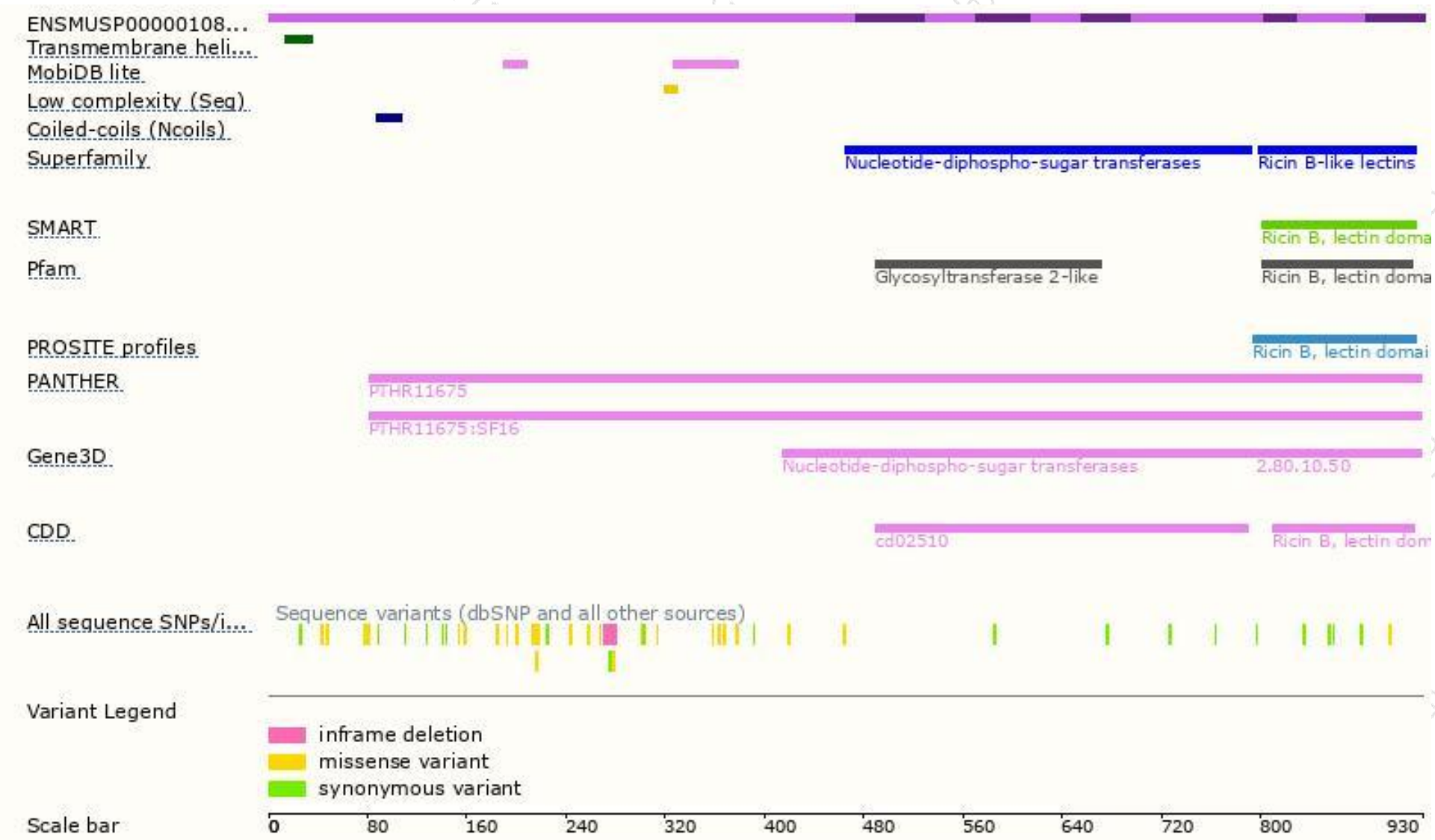The strategy is based on the design of *Galnt5-201* transcript,The transcription is shown below

Genomic location distribution

Protein domain

ENSMUSP00000108...	
Transmembrane heli...	
MobiDB lite	
Low complexity (Seg)	
Coiled-coils (Ncoils)	
Superfamily	Nucleotide-diphospho-sugar transferases / Ricin B-like lectins
SMART	Ricin B, lectin doma
Pfam	Glycosyltransferase 2-like / Ricin B, lectin doma
PROSITE profiles	Ricin B, lectin domai
PANTHER	PTHR11675 / PTHR11675:SF16
Gene3D	Nucleotide-diphospho-sugar transferases / 2.80.10.50
CDD	cd02510 / Ricin B, lectin dom
All sequence SNPs/i...	Sequence variants (dbSNP and all other sources)

Variant Legend

- inframe deletion
- missense variant
- synonymous variant

Scale bar: 0   80   160   240   320   400   480   560   640   720   800   930

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