Galntl6 Cas9-KO Strategy

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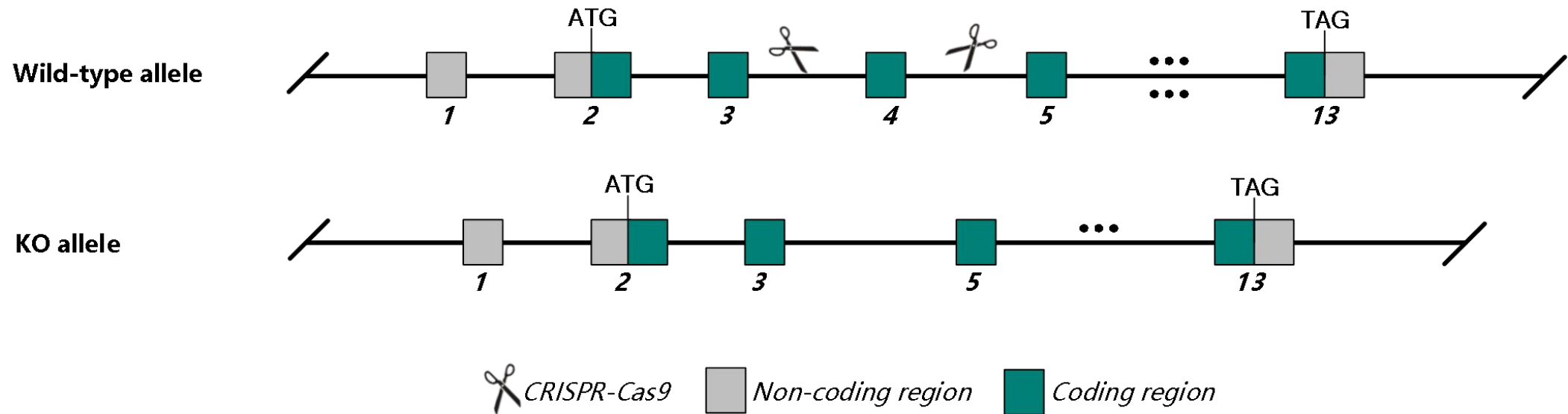
Overview

Target Gene Name

- Galntl6

Project Type

- Cas9-KO

Genetic Background

- C57BL/6JGpt

Strain Strategy

Schematic representation of CRISPR-Cas9 engineering used to edit the *Galntl6* gene.

Technical Information

- The *Galntl6* gene has 9 transcripts. According to the structure of *Galntl6* gene, exon 4 of *Soat1*-208 (ENSMUST00000204128.3) transcript is recommended as the knockout region. The region contains 139 bp of coding sequences. Knocking out the region will result in disruption of protein function.

- In this project we use CRISPR-Cas9 technology to modify *Galntl6* gene. The brief process is as follows: gRNAs were transcribed in vitro. Cas9 and gRNAs 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 on-target amplicon sequencing. A stable F1-generation mouse strain was obtained by mating positive F0-generation mice with C57BL/6JGpt mice and confirmation of the desired mutant allele was carried out by PCR and on-target amplicon sequencing.

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Gene Information

Galntl6 UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase-like 6 [*Mus musculus* (house mouse)]

Gene ID: 270049, updated on 12-Apr-2023

⬇ **Download Datasets**

▲ **Summary**   ⌃ ?

Official Symbol	Galntl6 provided by MGI
Official Full Name	UDP-N-acetyl-alpha-D-galactosamine:polypeptide N-acetylgalactosaminyltransferase-like 6 provided by MGI
Primary source	MGI:MGI:1913581
See related	Ensembl:ENSMUSG00000096914 AllianceGenome:MGI:1913581
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	A830023L05; 1700021K10Rik; 4930431L04Rik
Summary	Predicted to enable polypeptide N-acetylgalactosaminyltransferase activity. Predicted to be involved in protein O-linked glycosylation via threonine. Predicted to be active in Golgi apparatus. Is expressed in eye; facial bone primordium; and nervous system. Orthologous to human GALNTL6 (polypeptide N-acetylgalactosaminyltransferase like 6). [provided by Alliance of Genome Resources, Apr 2022]
Expression	Biased expression in testis adult (RPKM 2.7), frontal lobe adult (RPKM 1.7) and 5 other tissues See more
Orthologs	human all
NEW	Try the new **Gene table** Try the new **Transcript table**

▲ **Genomic context**   ⌃ ?

Location: 8; 8 B2	See Galntl6 in Genome Data Viewer
Exon count: 14	

Source: https://www.ncbi.nlm.nih.gov/
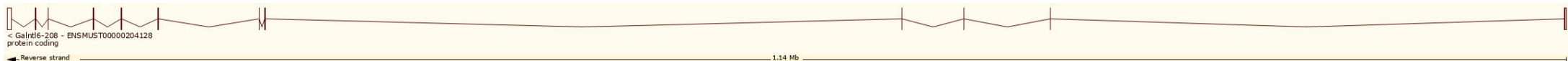
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Transcript Information

The gene has 9 transcripts, all transcripts are shown below:

Transcript ID	Name	bp	Protein	Biotype	CCDS	UniProt Match	Flags
ENSMUST00000204937.2	Galntl6-209	567	No protein	Protein coding CDS not defined		-	TSL:5
ENSMUST00000204128.3	Galntl6-208	5680	601aa	Protein coding	CCDS22318	E5D8G1	Ensembl Canonical GENCODE basic APPRIS P1 TSL:5
ENSMUST00000204067.3	Galntl6-207	1592	66aa	Protein coding		A0A0N4SVA3	GENCODE basic TSL:1
ENSMUST00000203398.2	Galntl6-206	575	63aa	Protein coding		A0A0N4SVY4	TSL:5 CDS 3' incomplete
ENSMUST00000188531.7	Galntl6-205	1056	139aa	Protein coding		A0A087WP88	GENCODE basic TSL:5
ENSMUST00000146513.8	Galntl6-204	869	51aa	Nonsense mediated decay		D6RIJ0	TSL:2
ENSMUST00000125865.3	Galntl6-203	886	No protein	Protein coding CDS not defined		-	TSL:1
ENSMUST00000098757.4	Galntl6-202	2210	417aa	Protein coding		F6RYQ3	GENCODE basic TSL:5
ENSMUST00000077447.11	Galntl6-201	912	No protein	Retained intron		-	TSL:2

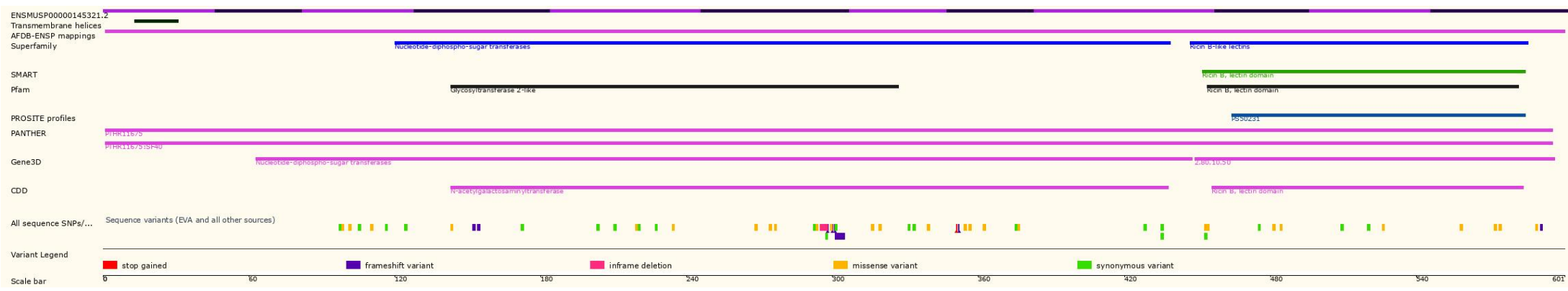The strategy is based on the design of *Galntl6-208* transcript, the transcription is shown below:

< Galntl6-208 - ENSMUST00000204128
protein coding
◄ Reverse strand   1.14 Mb

Source: https://www.ensembl.org

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Genomic Information

Source: : https://www.ensembl.org
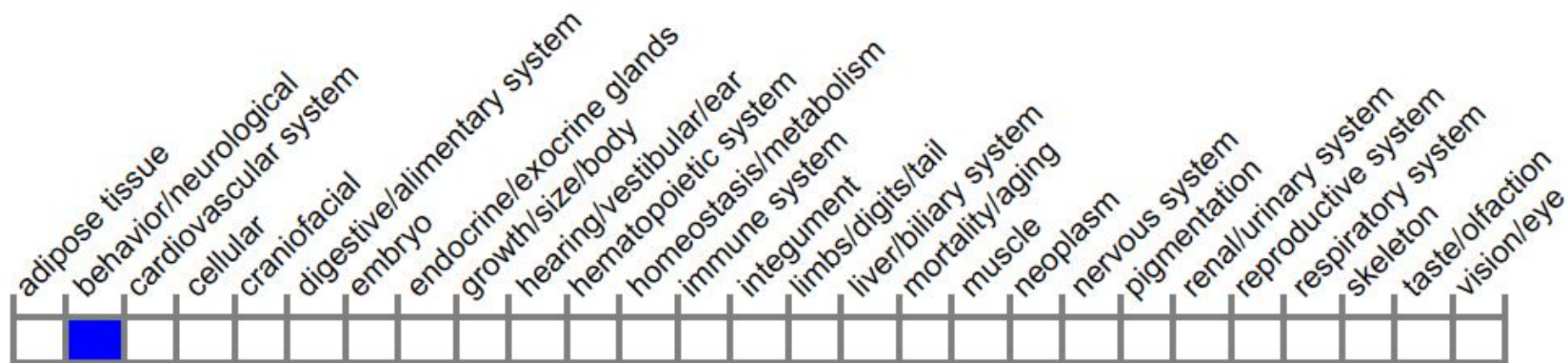
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Protein Information

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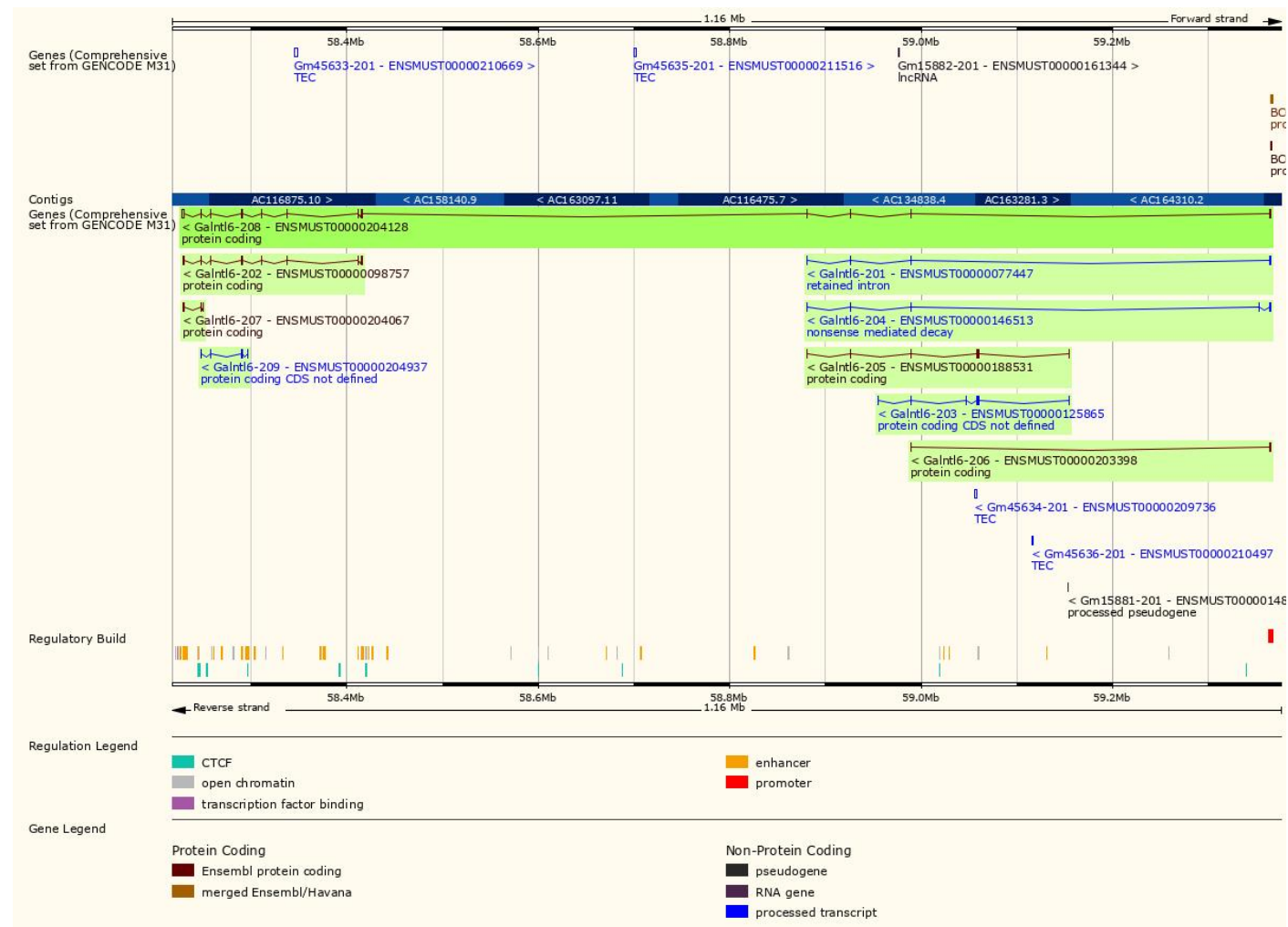
Mouse Phenotype Information (MGI)

Important Information

- The effect of this strategy on the transcript *Galntl6*-202, *Galntl6*-203, *Galntl6*-206, *Galntl6*-207, *Galntl6*-209 is unknown.

- *Galntl6* is located on Chr 8. If the knockout mice are crossed with other mouse strains to obtain double homozygous mutant offspring, please avoid the situation that the second gene is on the same chromosome.

- This strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risks of the mutation on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.