

***Galnt13* Cas9-KO Strategy**

Designer: Xueting Zhang

Reviewer: Yanhua Shen

Date: 2020-03-05

Project Overview

Project Name

Galnt13

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Galnt13* gene. The schematic diagram is as follows:



- The *Galnt13* gene has 5 transcripts. According to the structure of *Galnt13* gene, exon4 of *Galnt13-203* (ENSMUST00000112635.7) transcript is recommended as the knockout region. The region contains 169bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Galnt13* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, *Galnt13* is expressed exclusively in neuronal cells. Conditional animals can be used with cre-expressing strains to produce total or tissue-specific deletion of this locus.
- The *Galnt13* 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)

Galnt13 polypeptide N-acetylgalactosaminyltransferase 13 [*Mus musculus* (house mouse)]

Gene ID: 271786, updated on 27-Aug-2019

Summary

Official Symbol Galnt13 provided by [MGI](#)
Official Full Name polypeptide N-acetylgalactosaminyltransferase 13 provided by [MGI](#)
Primary source [MGI:MGI:2139447](#)
See related [Ensembl:ENSMUSG00000060988](#)
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 BB182356; A230002A12; A230020F20
Expression Biased expression in cerebellum adult (RPKM 5.4), frontal lobe adult (RPKM 1.6) and 4 other tissues [See more](#)
Orthologs [human](#) [all](#)

Genomic context

Location: 2; 2 C1.1

See Galnt13 in [Genome Data Viewer](#)

Exon count: 16

Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	2	NC_000068.7 (54436211..55118309)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	2	NC_000068.6 (54288798..54970155)

Transcript information (Ensembl)

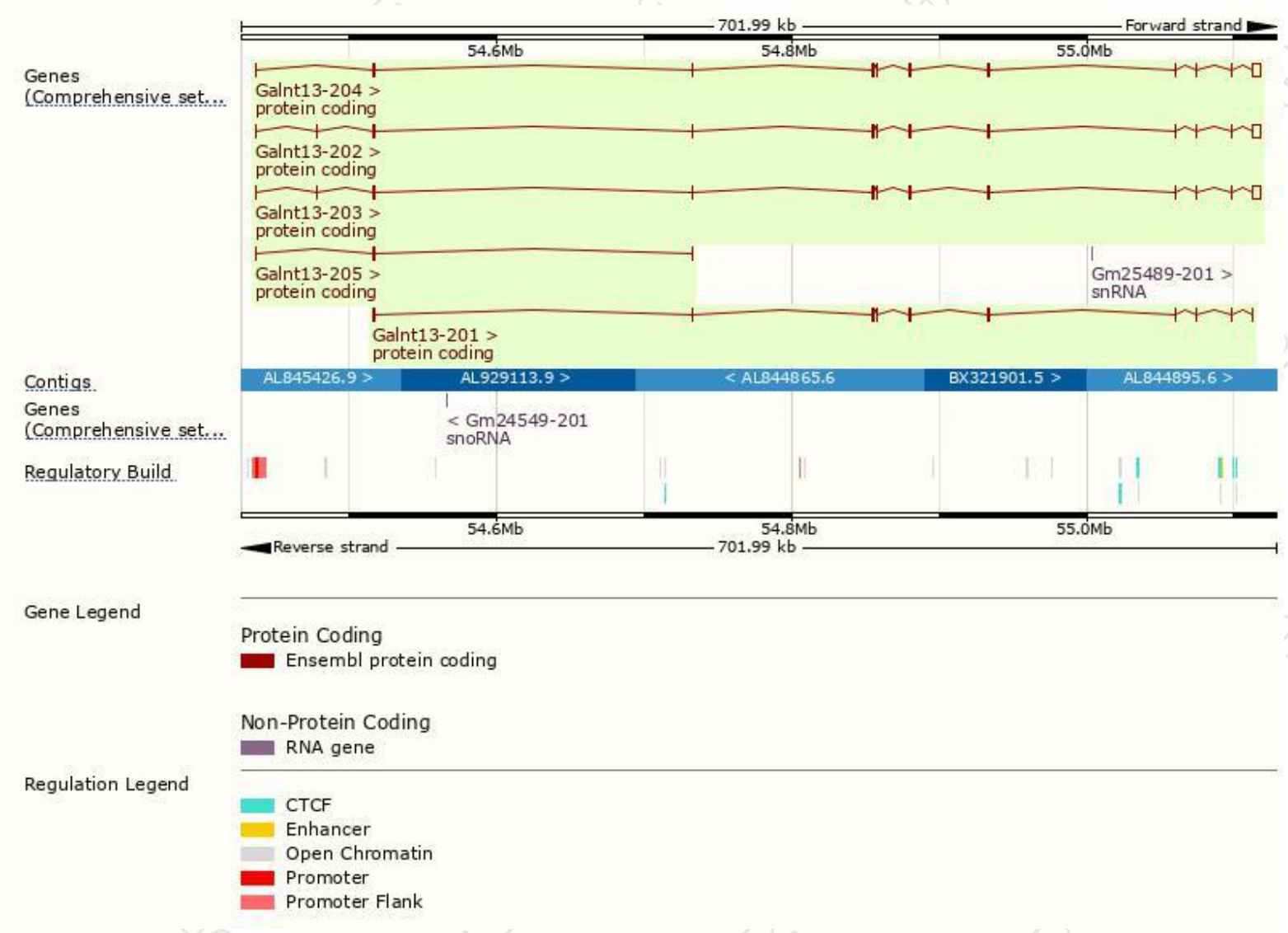
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Galnt13-203	ENSMUST00000112635.7	7531	556aa	Protein coding	CCDS16041	A2RRI8 Q8CF93	TSL:1 GENCODE basic APPRIS P1
Galnt13-204	ENSMUST00000112636.7	7530	556aa	Protein coding	CCDS16041	A2RRI8 Q8CF93	TSL:1 GENCODE basic APPRIS P1
Galnt13-201	ENSMUST00000068595.5	1671	556aa	Protein coding	CCDS16041	A2RRI8 Q8CF93	TSL:1 GENCODE basic APPRIS P1
Galnt13-202	ENSMUST00000112634.7	7639	592aa	Protein coding	-	Q8CF93	TSL:1 GENCODE basic
Galnt13-205	ENSMUST00000136642.1	728	96aa	Protein coding	-	B1AY79	CDS 3' incomplete TSL:2

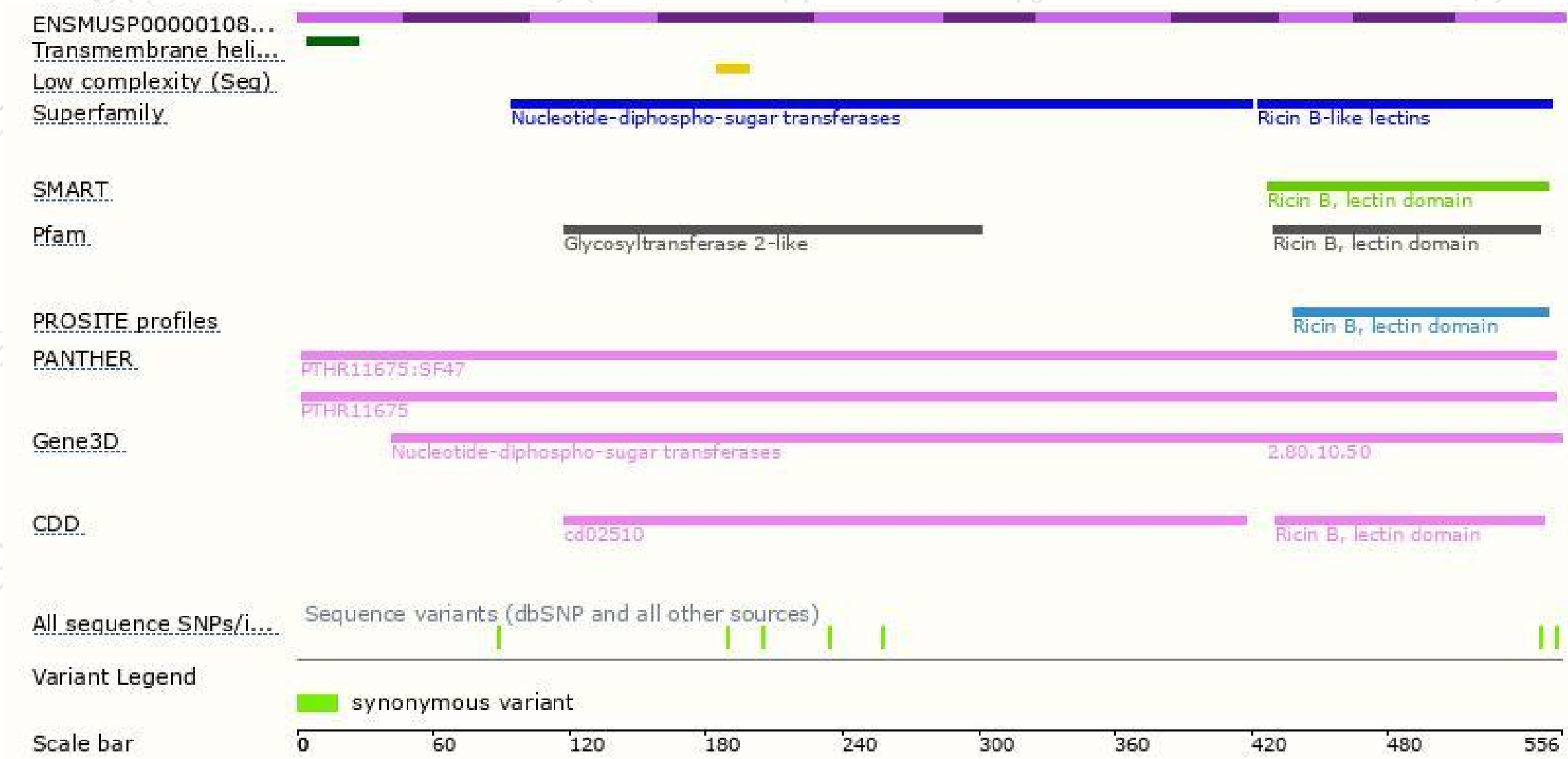
The strategy is based on the design of *Galnt13-203* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

