

# ***B4galt7* Cas9-KO Strategy**

Designer: Yanhua Shen

Reviewer: Xueting Zhang

Design Date: 2020-2-15

# Project Overview

**Project Name**

***B4galt7***

**Project type**

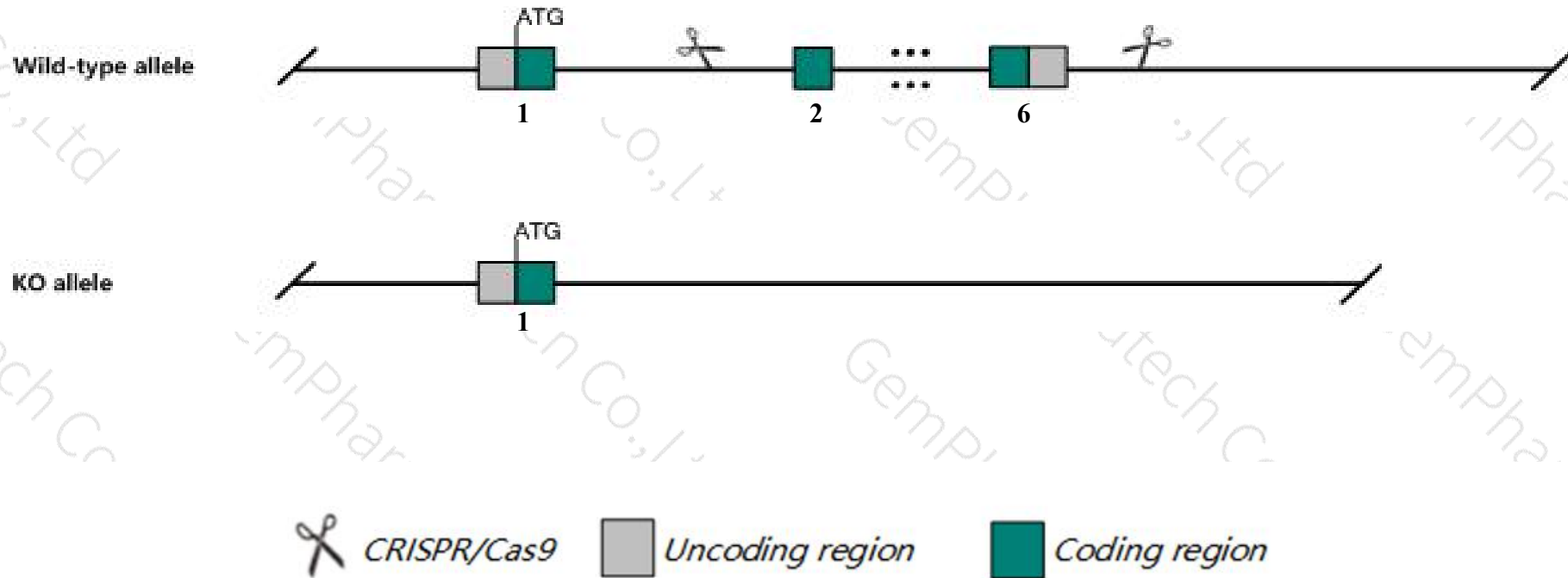
**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *B4galt7* gene. The schematic diagram is as follows:



- The *B4galt7* gene has 4 transcripts. According to the structure of *B4galt7* gene, exon2-exon6 of *B4galt7-201* (ENSMUST00000064701.7) transcript is recommended as the knockout region. The region contains most of coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *B4galt7* gene. The brief process is as follows: CRISPR/Cas9 system

- *Gm15911*-201 gene may be destroyed.
- The effect of transcript 203 is unknown.
- The *B4galt7* gene is located on the Chr13. 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)

**B4galt7** xylosylprotein beta1,4-galactosyltransferase, polypeptide 7 (galactosyltransferase I) [ *Mus musculus* (house mouse) ]

Gene ID: 218271, updated on 12-Aug-2019

## Summary



Official Symbol	B4galt7 provided by <a href="#">MGI</a>
Official Full Name	xylosylprotein beta1,4-galactosyltransferase, polypeptide 7 (galactosyltransferase I) provided by <a href="#">MGI</a>
Primary source	<a href="#">MGI:MGI:2384987</a>
See related	<a href="#">Ensembl:ENSMUSG000000021504</a>
Gene type	protein coding
RefSeq status	VALIDATED
Organism	<a href="#">Mus musculus</a>
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	XGPT; XGalT-1
Expression	Ubiquitous expression in whole brain E14.5 (RPKM 11.8), limb E14.5 (RPKM 11.7) and 28 other tissues <a href="#">See more</a>
Orthologs	<a href="#">human</a> <a href="#">all</a>

## Genomic context



Location: 13; 13 B1

Exon count: 6

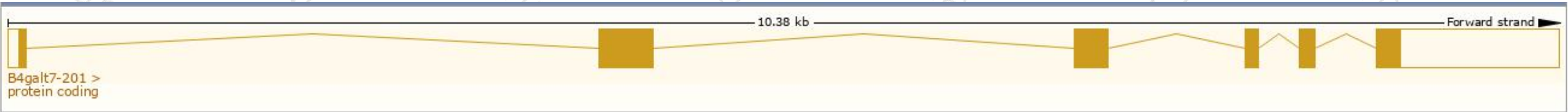
See B4galt7 in [Genome Data Viewer](#)

# Transcript information (Ensembl)

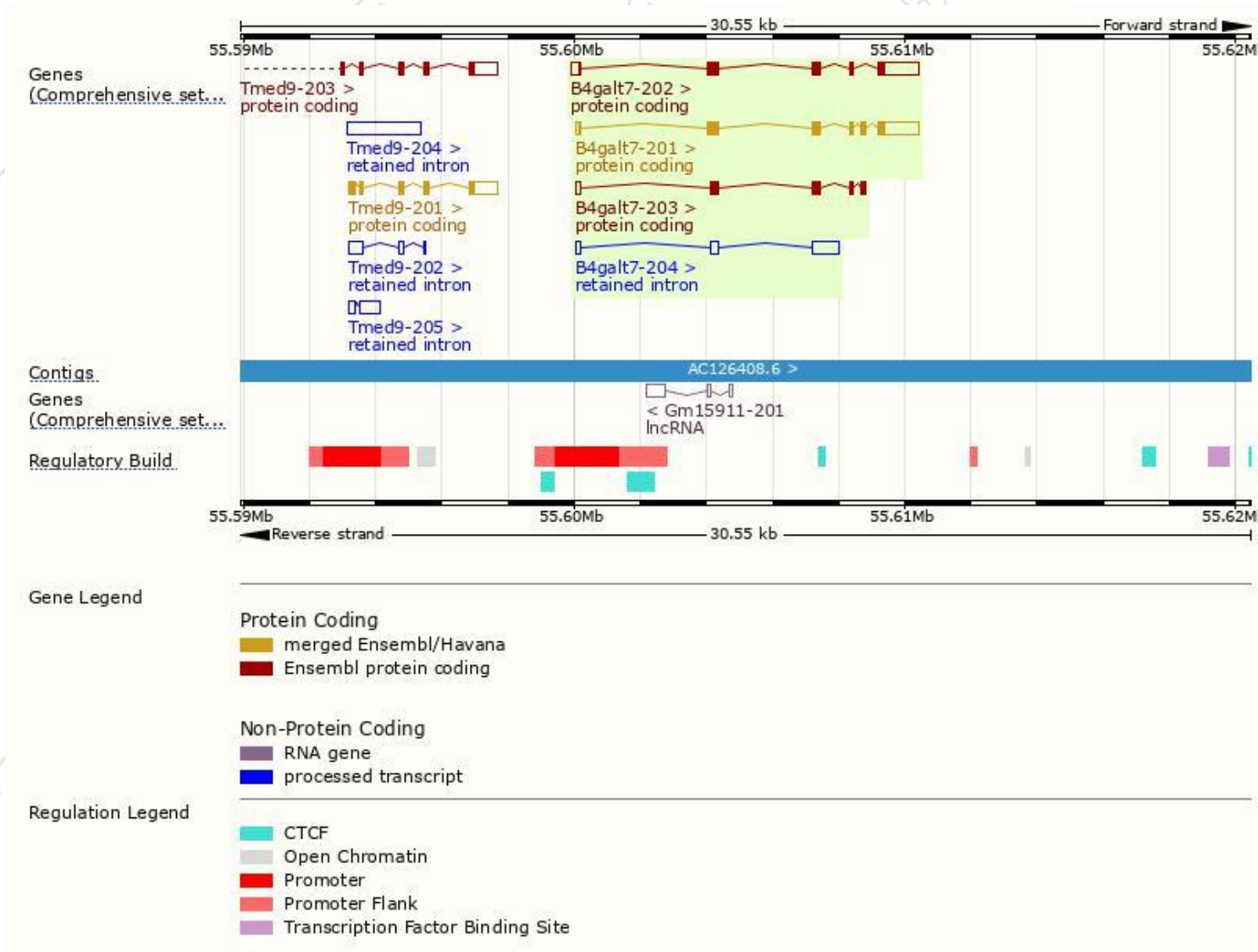
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
B4galt7-202	<a href="#">ENSMUST00000100764.9</a>	2195	<a href="#">292aa</a>	Protein coding	<a href="#">CCDS79190</a>	<a href="#">Q8R087</a>	TSL:1 GENCODE basic
B4galt7-201	<a href="#">ENSMUST00000064701.7</a>	2130	<a href="#">327aa</a>	Protein coding	<a href="#">CCDS26550</a>	<a href="#">Q3TAW1 Q8R087</a>	TSL:1 GENCODE basic APPRIS P1
B4galt7-203	<a href="#">ENSMUST00000133176.7</a>	806	<a href="#">220aa</a>	Protein coding	-	<a href="#">D3Z065</a>	CDS 3' incomplete TSL:3
B4galt7-204	<a href="#">ENSMUST00000142654.7</a>	1213	No protein	Retained intron	-	-	TSL:1

The strategy is based on the design of *B4galt7-201* transcript,The transcription is shown below

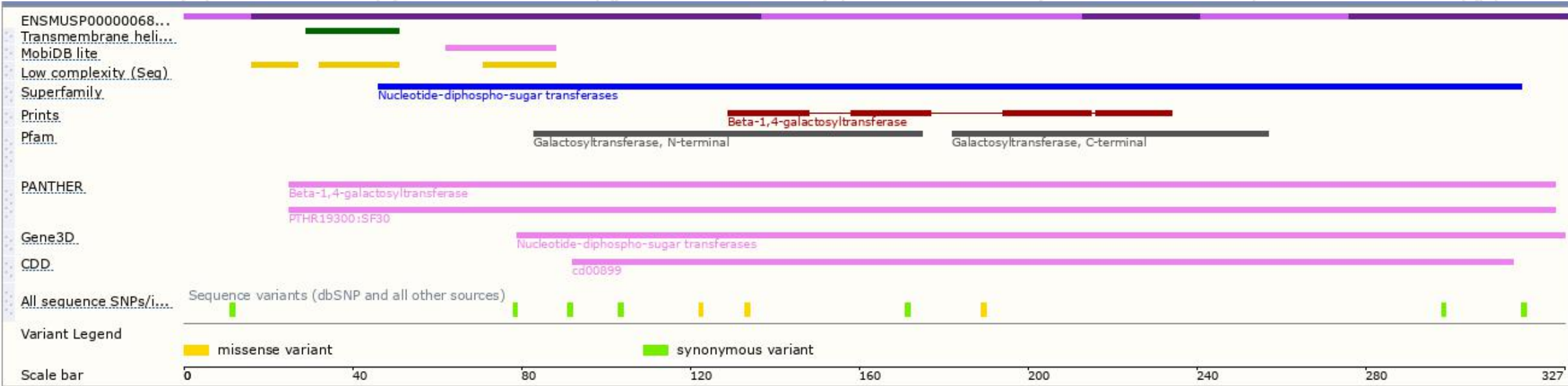


# Genomic location distribution





# Protein domain



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

Tel: 400-9660890

