

B4galnt2 Cas9-KO Strategy

Designer:

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Project Overview

Project Name

B4galnt2

Project type

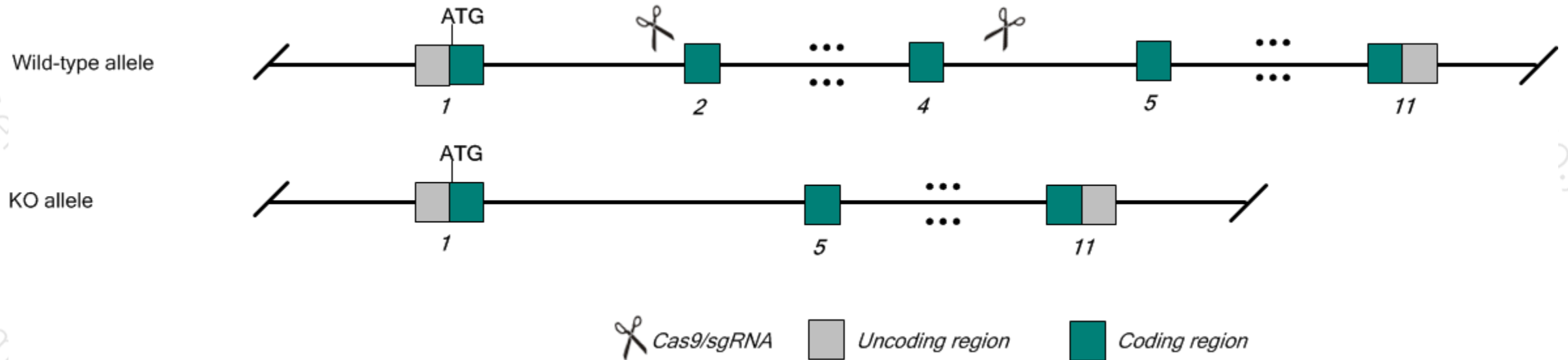
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *B4galnt2* gene. The schematic diagram is as follows:



Technical routes

- The *B4galnt2* gene has 1 transcripts, According to the structure of *B4galnt2* gene, exon2-4 of *B4galnt2-201* transcript is recommended as the knockout region. The region contains the 461bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *B4galnt2* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA 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.

- According to the existing MGI data , Mice homozygous for a null allele show increased startle reflex, increased systemic arterial diastolic blood pressure, abnormal B cell number, increased neutrophil cell number, and increased circulating alkaline phosphatase level.
- The *B4galnt2* gene is located in 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 the loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

B4galnt2 beta-1,4-N-acetyl-galactosaminyl transferase 2 [*Mus musculus* (house mouse)]

Gene ID: 14422, updated on 8-Dec-2018

Summary

Official Symbol B4galnt2 provided by [MGI](#)

Official Full Name beta-1,4-N-acetyl-galactosaminyl transferase 2 provided by [MGI](#)

Primary source [MGI:MGI:1342058](#)

See related [Ensembl:ENSMUSG000000013418](#)

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 Dlb1; Ggm3; Dlb-1; Galg2; Galgt2; Igf2bp1; AI593864

Expression Biased expression in large intestine adult (RPKM 61.1), colon adult (RPKM 27.1) and 4 other tissues [See more](#)

Orthologs [human](#) [all](#)

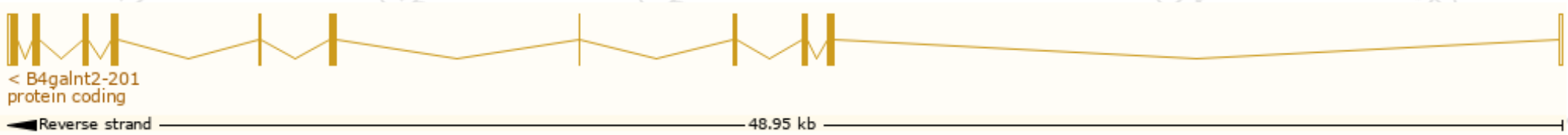
Transcript information (Ensembl)



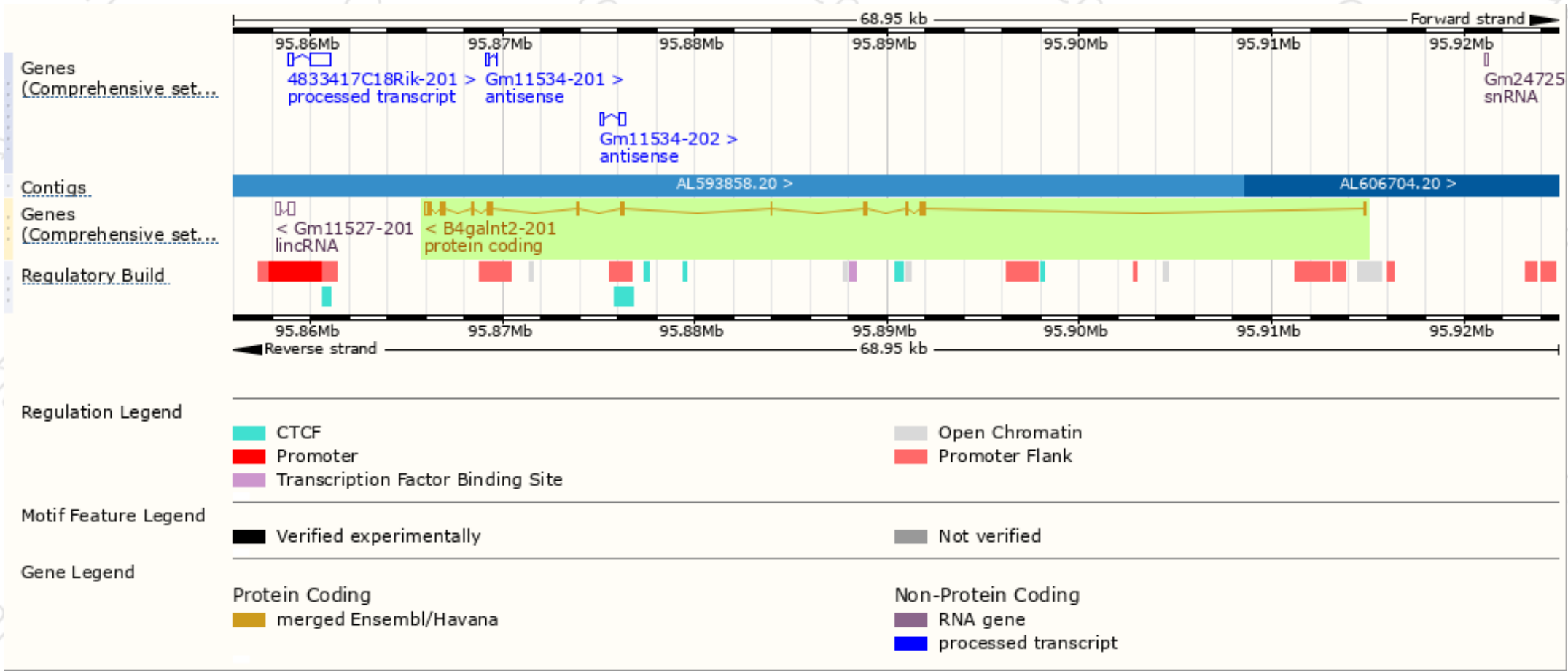
The gene has 1 transcripts, and all transcripts are shown below :

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	RefSeq	Flags
B4galnt2-201	ENSMUST00000038343.6	1722	510aa	Protein coding	CCDS25285	A2A615 Q09199	NM_008081 NP_032107	TSL:1 Gencode basic APPRIS P1

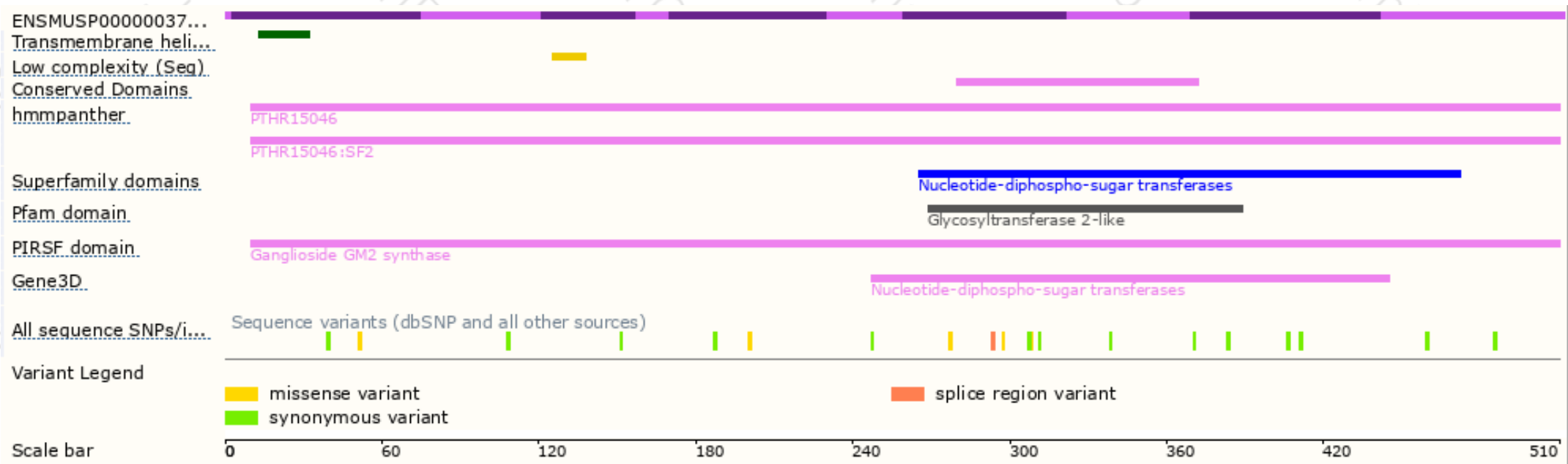
The strategy is based on the design of *B4galnt2-201* transcript, The transcription is shown below



Genomic location distribution



Protein domain



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