

***Gxylt2* Cas9-CKO Strategy**

Designer: Yanhua Shen

Reviewer: Xueting Zhang

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Project Overview

Project Name

Gxylt2

Project type

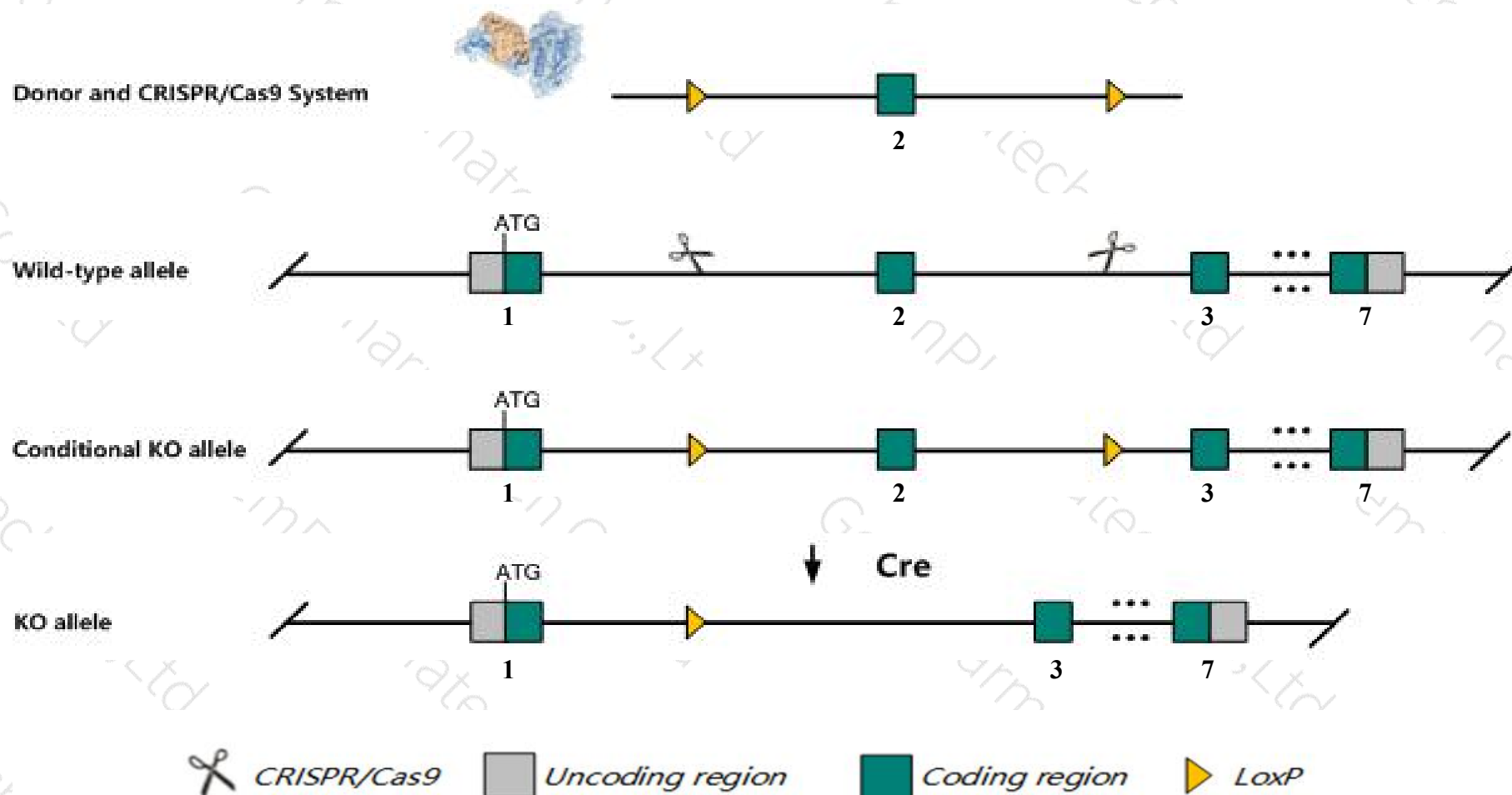
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gxylt2* gene. The schematic diagram is as follows:



- The *Gxylt2* gene has 2 transcripts. According to the structure of *Gxylt2* gene, exon2 of *Gxylt2-201* (ENSMUST00000032157.8) transcript is recommended as the knockout region. The region contains 190bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Gxylt2* gene. The brief process is as follows: CRISPR/Cas9 system and Donor 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.
- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

- Some amino acids will remain at the N-terminus and some functions may be retained.
- Transcript 202 may not be affected.
- The *Gxylt2* gene is located on the Chr6. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Gxylt2 glucoside xylosyltransferase 2 [*Mus musculus* (house mouse)]

Gene ID: 232313, updated on 12-Nov-2019

Summary



Official Symbol	Gxylt2 provided by MGI
Official Full Name	glucoside xylosyltransferase 2 provided by MGI
Primary source	MGI:MGI:2682940
See related	Ensembl:ENSMUSG00000030074
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Gm152; Glt8d4
Expression	Biased expression in ovary adult (RPKM 8.5), limb E14.5 (RPKM 8.0) and 13 other tissues See more
Orthologs	human all

Genomic context



Location: 6; 6 D3

Exon count: 7

See Gxylt2 in [Genome Data Viewer](#)

Transcript information (Ensembl)

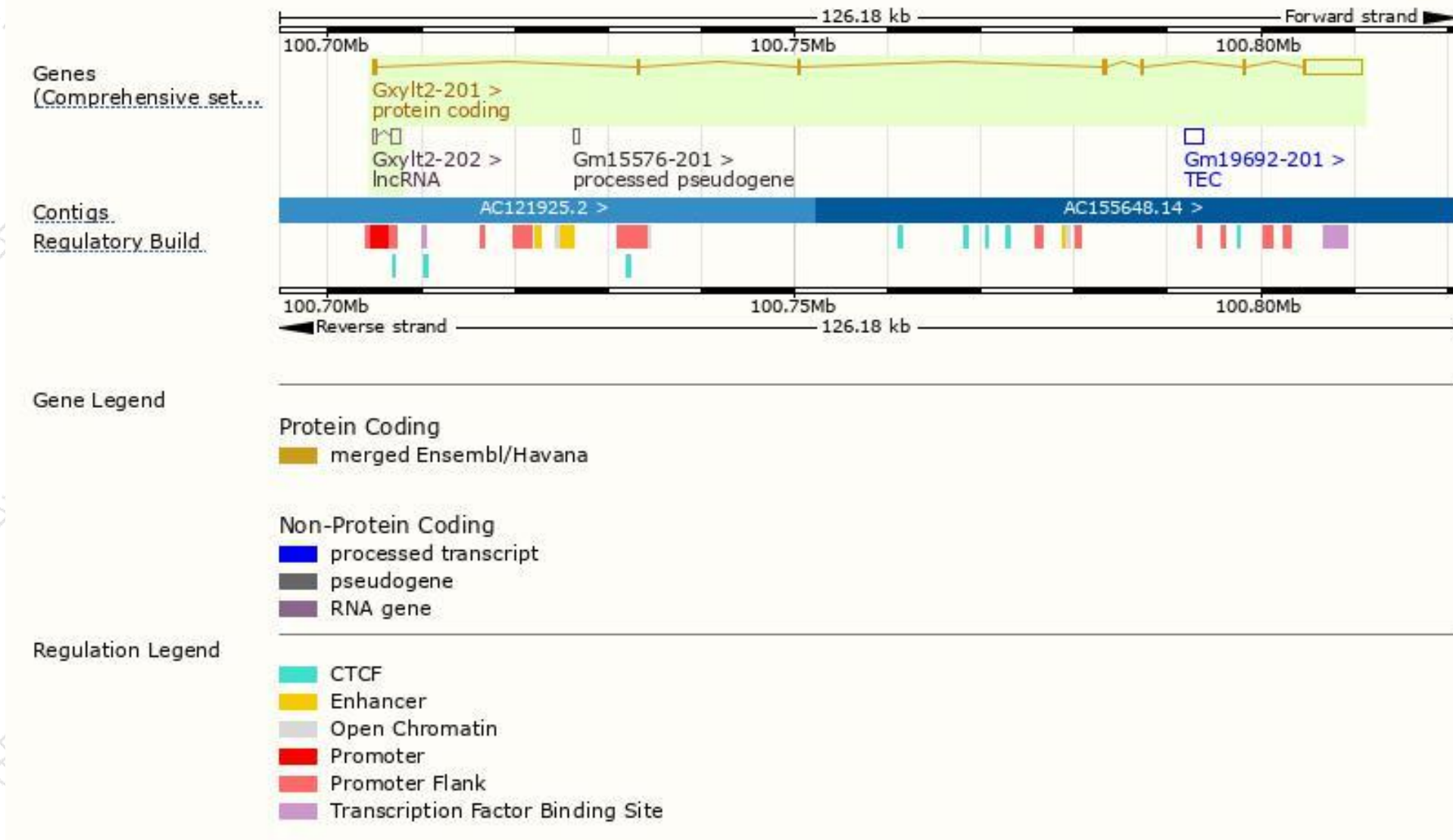
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gxylt2-201	ENSMUST00000032157.8	7658	444aa	Protein coding	CCDS20390	Q810K9	TSL:1 GENCODE basic APPRIS P1
Gxylt2-202	ENSMUST00000141333.1	1222	No protein	lncRNA	-	-	TSL:1

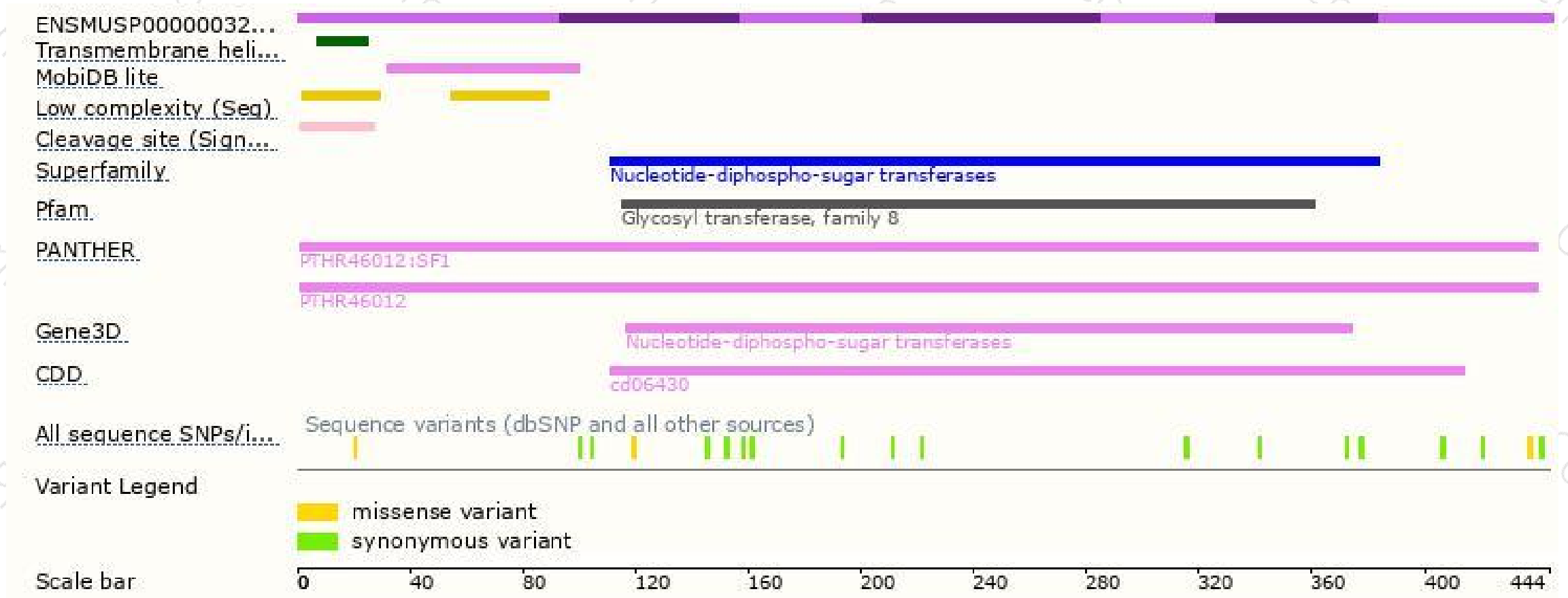
The strategy is based on the design of *Gxylt2-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

