

Xxylt1 Cas9-CKO Strategy

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Project Overview

Project Name

Xxylt1

Project type

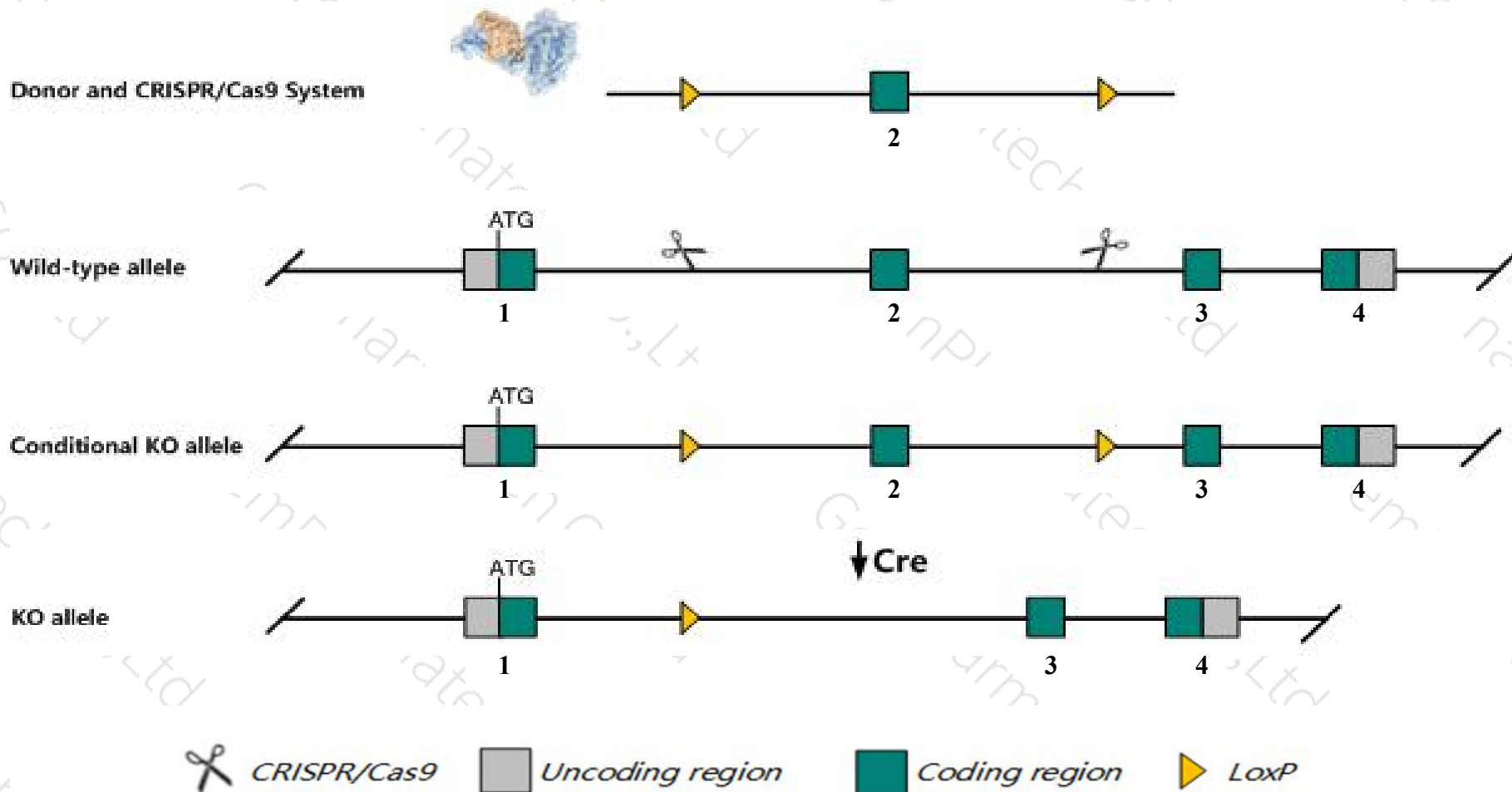
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Xxylt1* gene. The schematic diagram is as follows:



- The *Xyylt1* gene has 4 transcripts. According to the structure of *Xyylt1* gene, exon2 of *Xyylt1-201* (ENSMUST00000055389.8) transcript is recommended as the knockout region. The region contains 148bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Xyylt1* 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.

- Some amino acids will remain at the N-terminus and some functions may be retained.
- The *Xxylt1* gene is located on the Chr16. 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)

Xxylt1 xyloside xylosyltransferase 1 [*Mus musculus* (house mouse)]

Gene ID: 268880, updated on 12-Aug-2019

Summary



Official Symbol	Xxylt1 provided by MGI
Official Full Name	xyloside xylosyltransferase 1 provided by MGI
Primary source	MGI:MGI:2146443
See related	Ensembl:ENSMUSG00000047434
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	AI480653
Expression	Ubiquitous expression in adrenal adult (RPKM 12.5), ovary adult (RPKM 12.2) and 28 other tissues See more
Orthologs	human all

Genomic context



Location: 16; 16 B2

See Xxylt1 in [Genome Data Viewer](#)

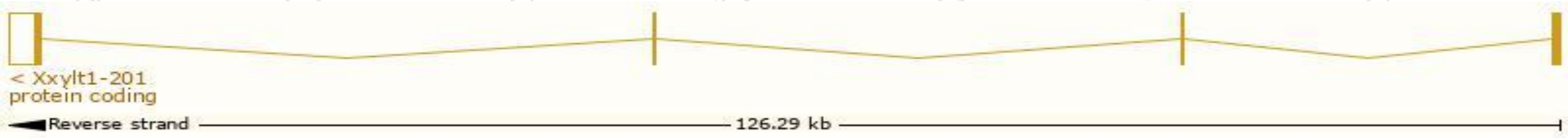
Exon count: 5

Transcript information (Ensembl)

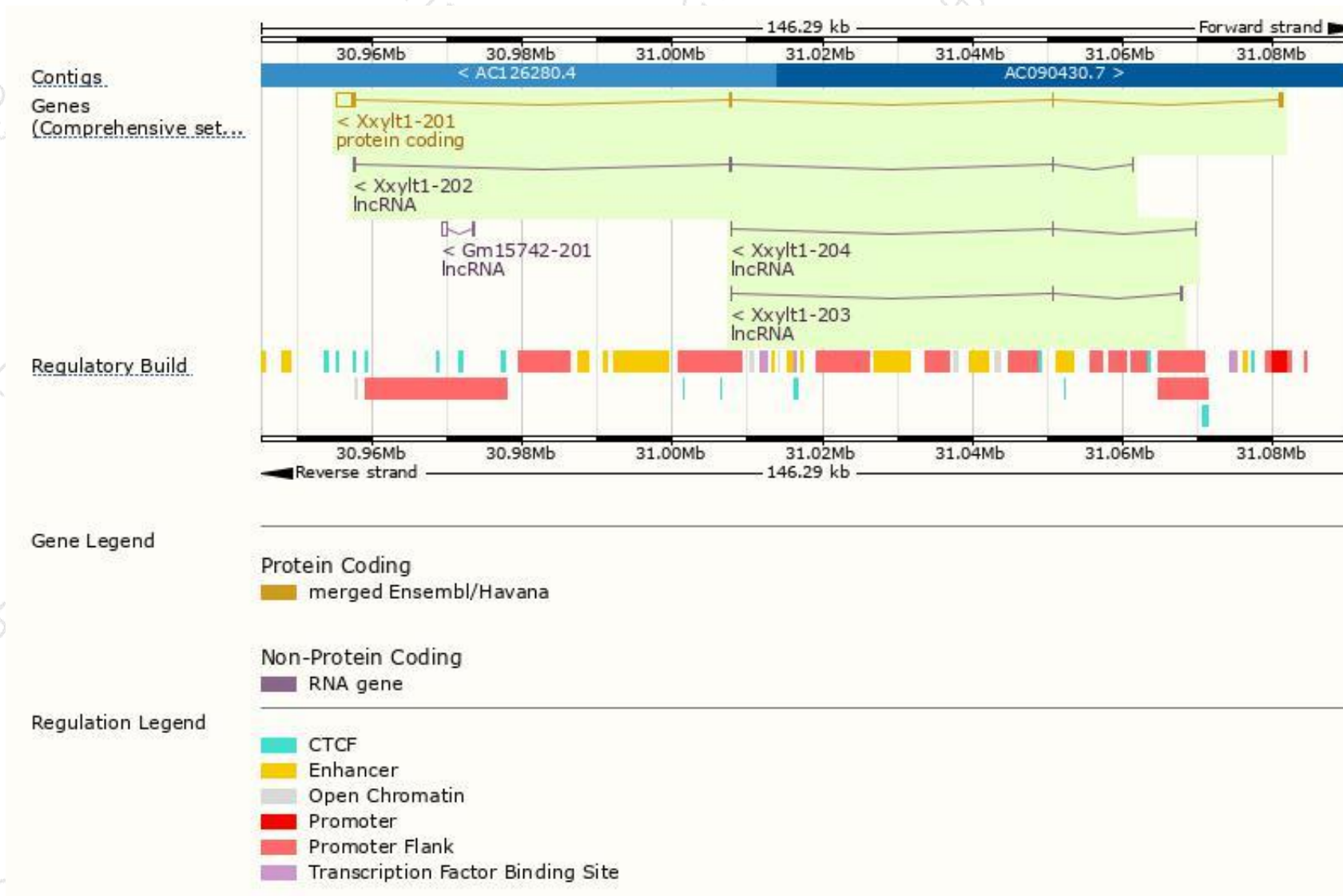
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Xxylt1-201	ENSMUST00000055389.8	3470	392aa	Protein coding	CCDS49822	Q3U4G3	TSL:1 GENCODE basic APPRIS P1
Xxylt1-202	ENSMUST00000140566.7	656	No protein	lncRNA	-	-	TSL:3
Xxylt1-204	ENSMUST00000153859.7	407	No protein	lncRNA	-	-	TSL:2
Xxylt1-203	ENSMUST00000142870.1	365	No protein	lncRNA	-	-	TSL:3

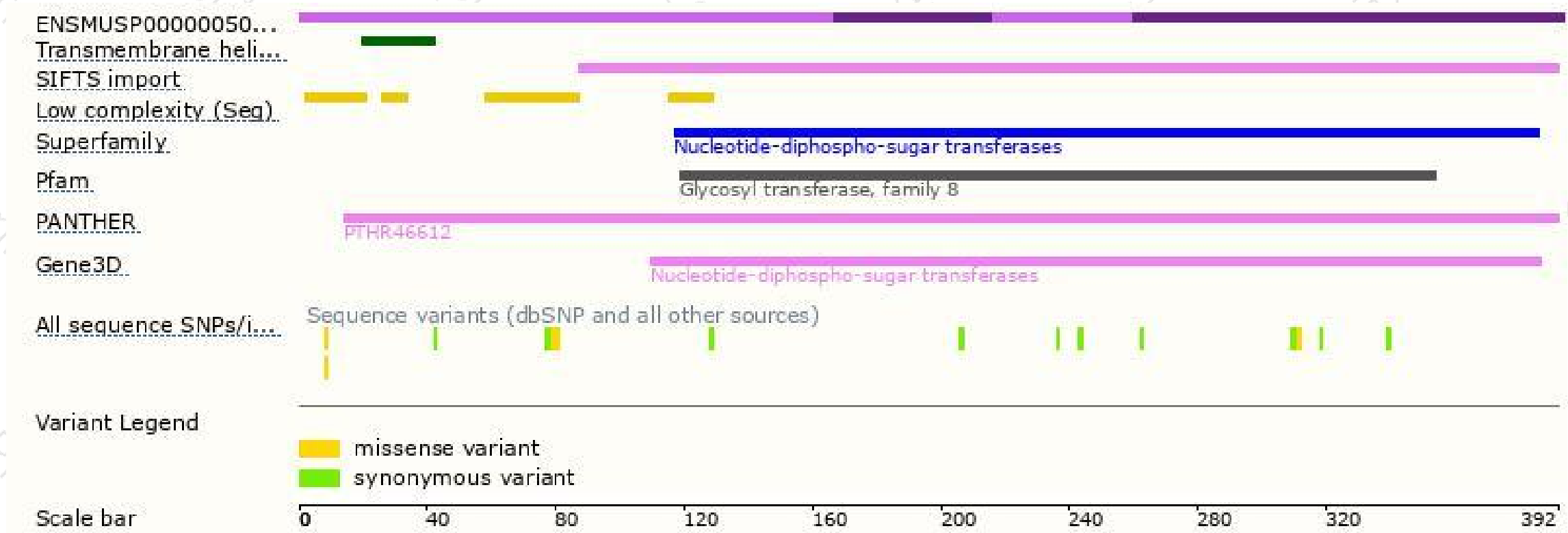
The strategy is based on the design of *Xxylt1-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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