

# *Xxylt1* Cas9-KO Strategy

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Design Date: 2020-2-15

# Project Overview

**Project Name**

***Xxylt1***

**Project type**

**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# 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

- 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.



# Gene information (NCBI)

## Xyylt1 xyloside xylosyltransferase 1 [ *Mus musculus* (house mouse) ]

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

### Summary



Official Symbol	Xyylt1 provided by <a href="#">MGI</a>
Official Full Name	xyloside xylosyltransferase 1 provided by <a href="#">MGI</a>
Primary source	<a href="#">MGI:MGI:2146443</a>
See related	<a href="#">Ensembl:ENSMUSG00000047434</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	AI480653
Expression	Ubiquitous expression in adrenal adult (RPKM 12.5), ovary adult (RPKM 12.2) and 28 other tissues <a href="#">See more</a>
Orthologs	<a href="#">human</a> <a href="#">all</a>

### Genomic context



Location: 16; 16 B2

See Xyylt1 in [Genome Data Viewer](#)

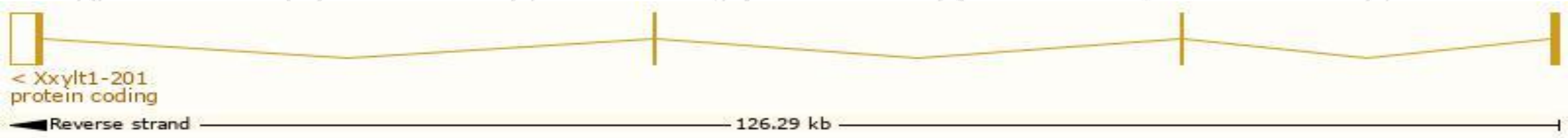
Exon count: 5

# Transcript information (Ensembl)

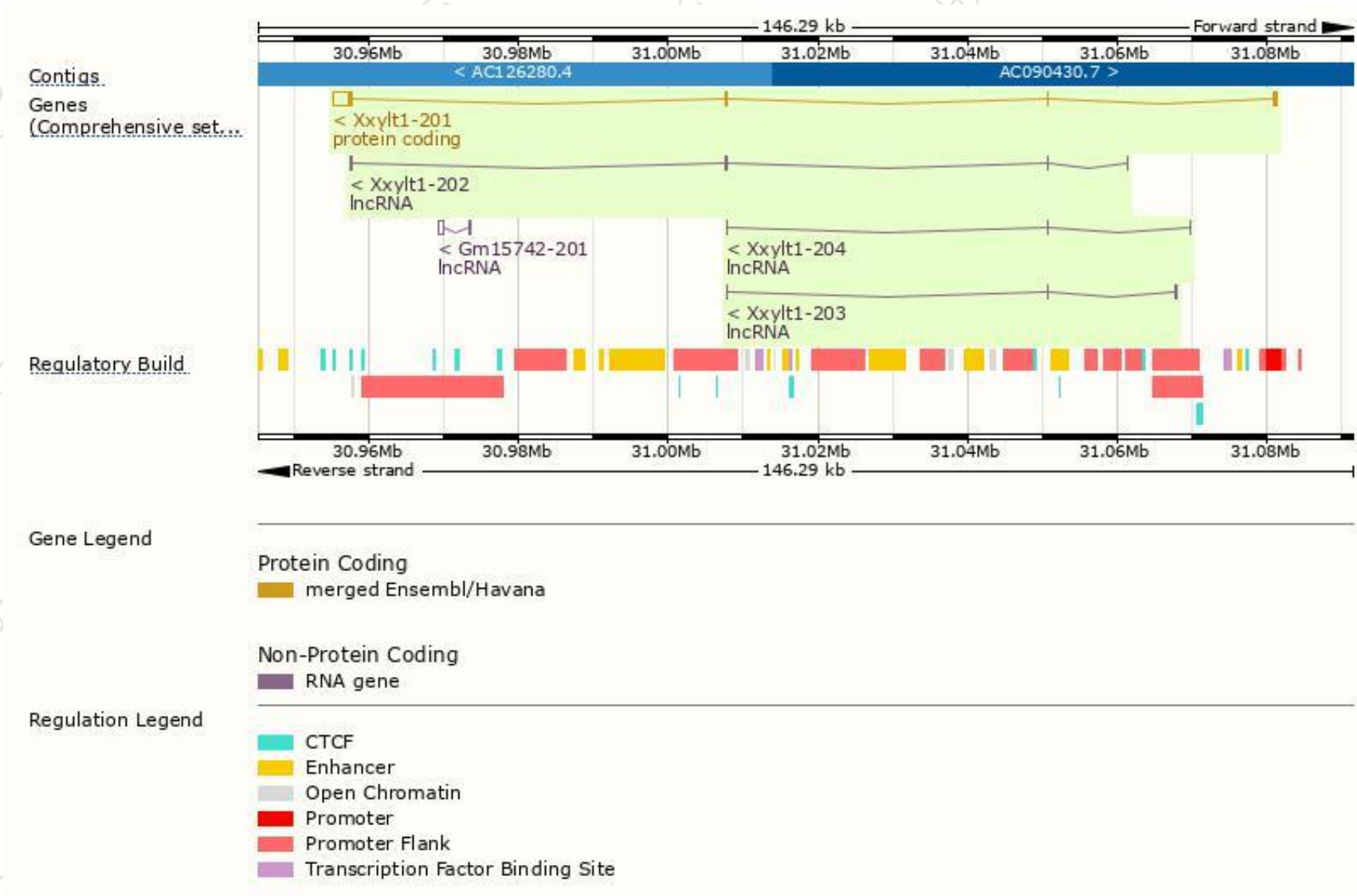
The gene has 4 transcripts,all transcripts are shown below:

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

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

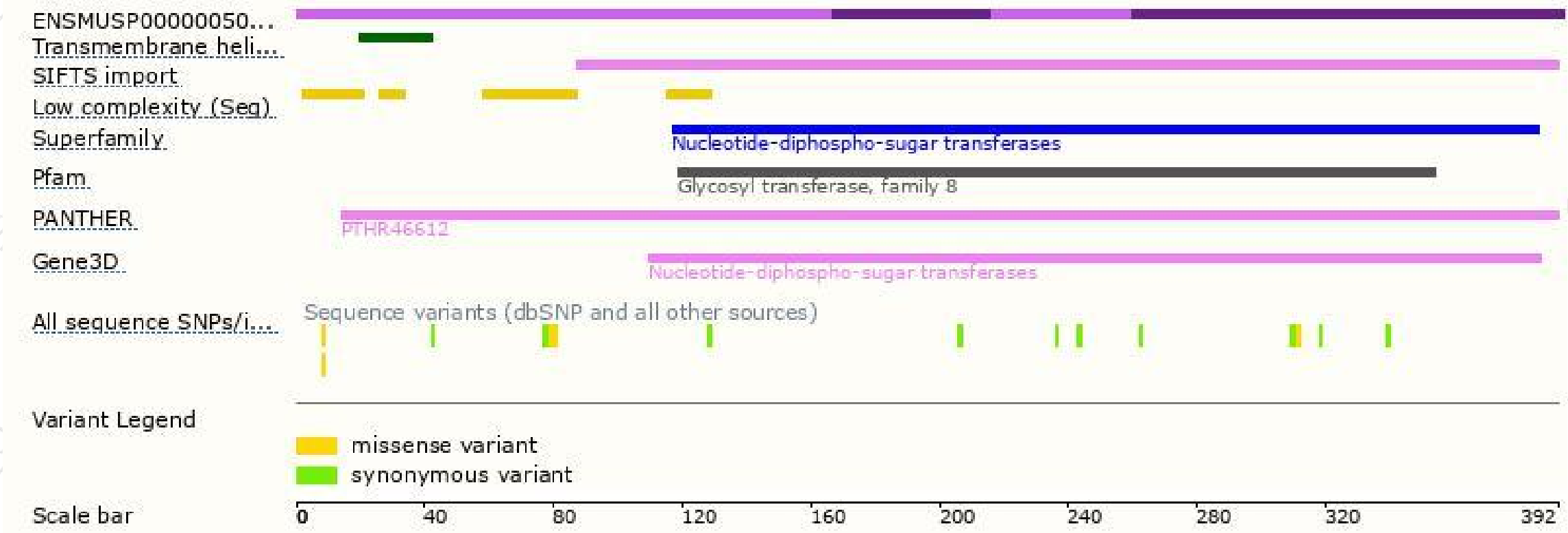


# Genomic location distribution

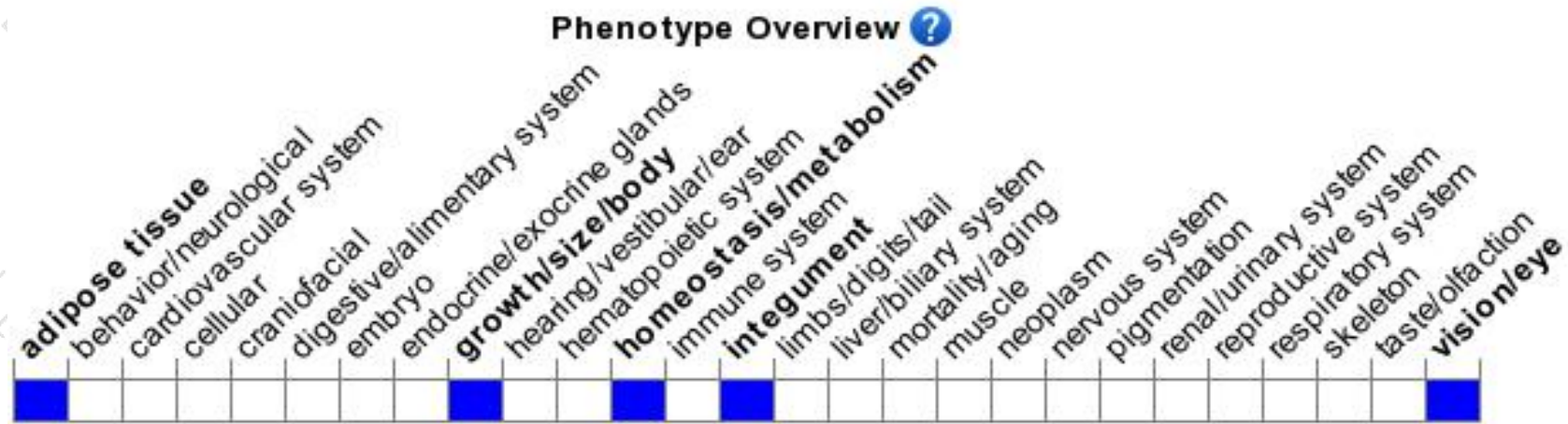




# Protein domain



# 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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