

Gal3st2b Cas9-CKO Strategy

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Project Overview

Project Name

Gal3st2b

Project type

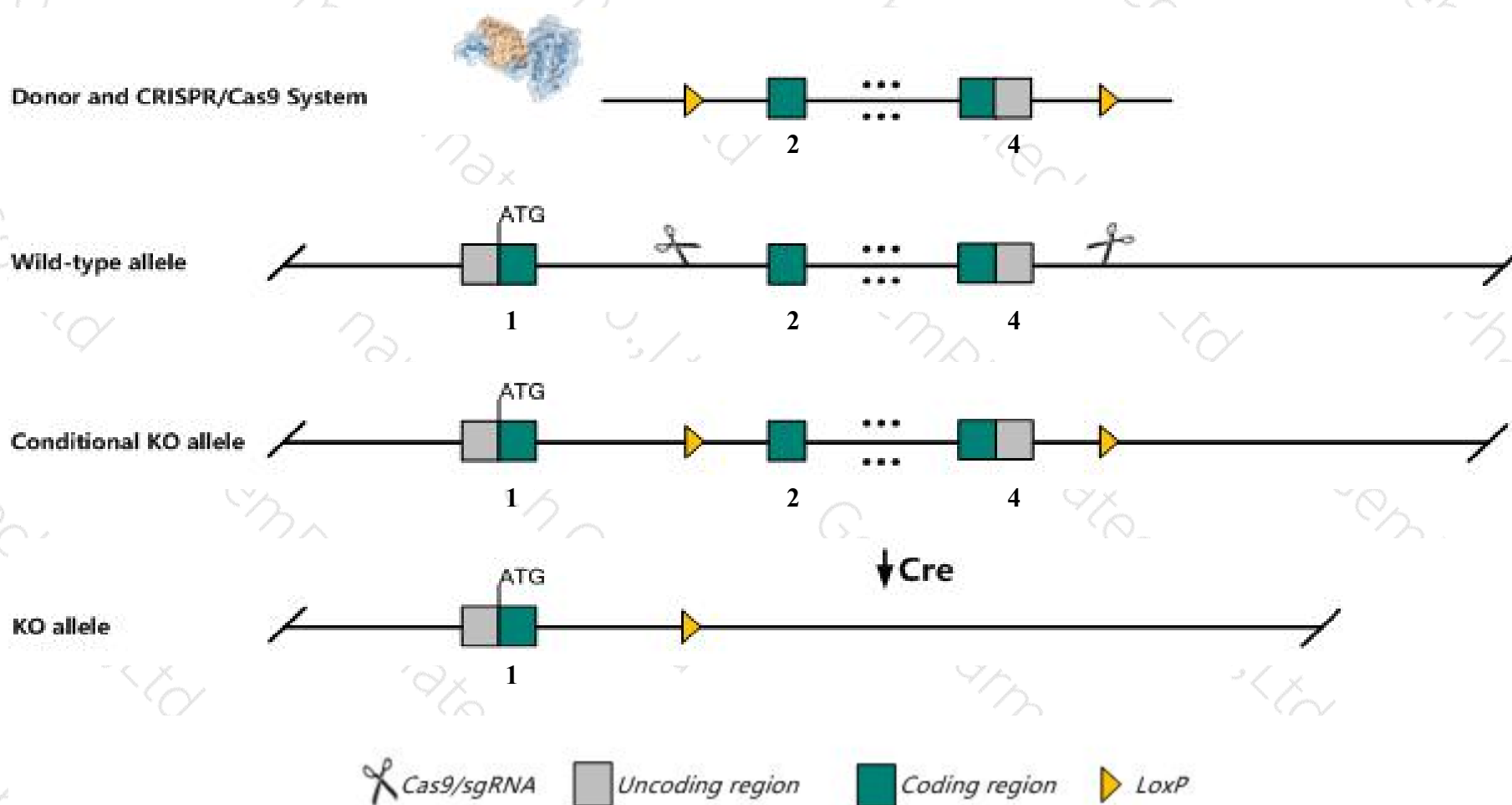
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gal3st2b* gene. The schematic diagram is as follows:



- The *Gal3st2b* gene has 2 transcripts. According to the structure of *Gal3st2b* gene, exon2-exon4 of *Gal3st2b-202*(ENSMUST00000178757.7) transcript is recommended as the knockout region. The region contains 1165bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Gal3st2b* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA 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 was 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.

- The *Gal3st2b* gene is located on the Chr1. 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)

Gal3st2b galactose-3-O-sulfotransferase 2B [Mus musculus (house mouse)]

Gene ID: 100041596, updated on 13-Mar-2020

Summary



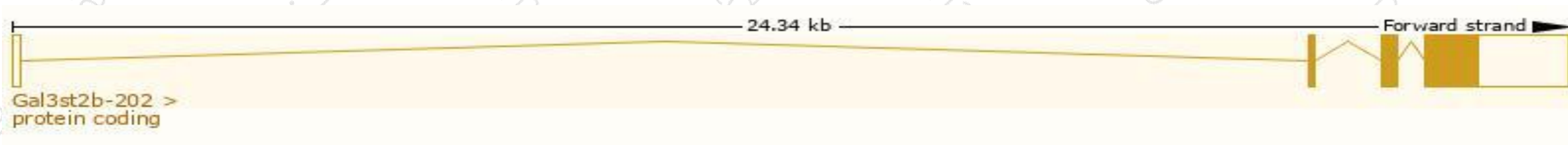
Official Symbol	Gal3st2b provided by MGI
Official Full Name	galactose-3-O-sulfotransferase 2B provided by MGI
Primary source	MGI:MGI:3711964
See related	Ensembl:ENSMUSG00000093805
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Gal3ST-2, Gal3st2, Gm9994
Expression	Biased expression in duodenum adult (RPKM 41.6), small intestine adult (RPKM 39.0) and 2 other tissues See more

Transcript information (Ensembl)

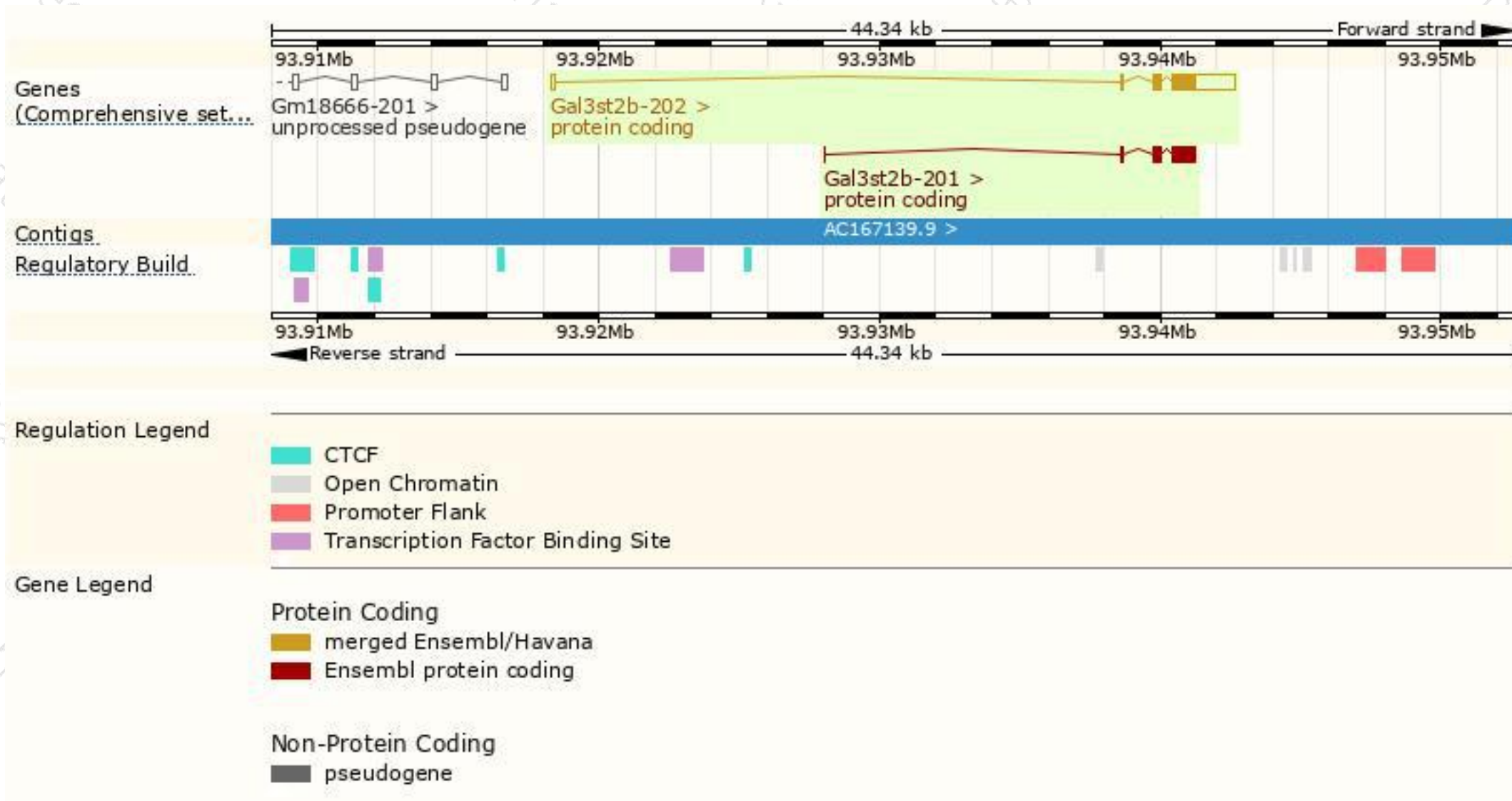
The gene has 2 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gal3st2b-202	ENSMUST00000178757.7	2722	394aa	Protein coding	CCDS56641	Q6XQH0	TSL:1 GENCODE basic APPRIS P2
Gal3st2b-201	ENSMUST00000177958.1	1191	396aa	Protein coding	-	J3QMJ1	TSL:1 GENCODE basic APPRIS ALT2

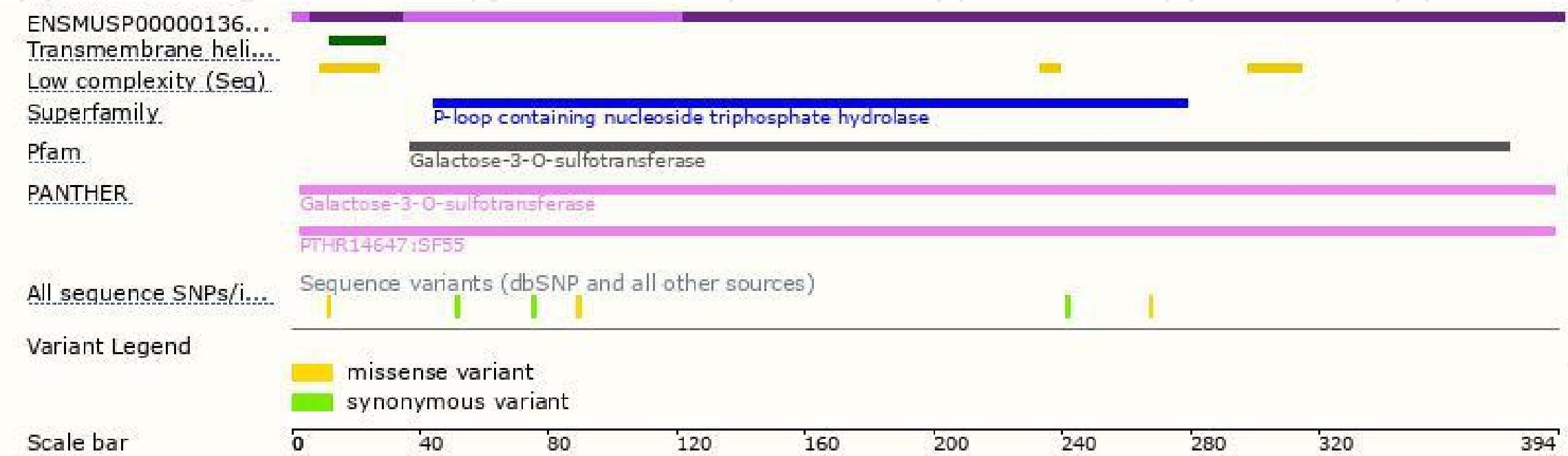
The strategy is based on the design of *Gal3st2b-202* transcript, the transcription is shown below:



Genomic location distribution



Protein domain



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

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