

Csgalnact2 Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Csgalnact2

Project type

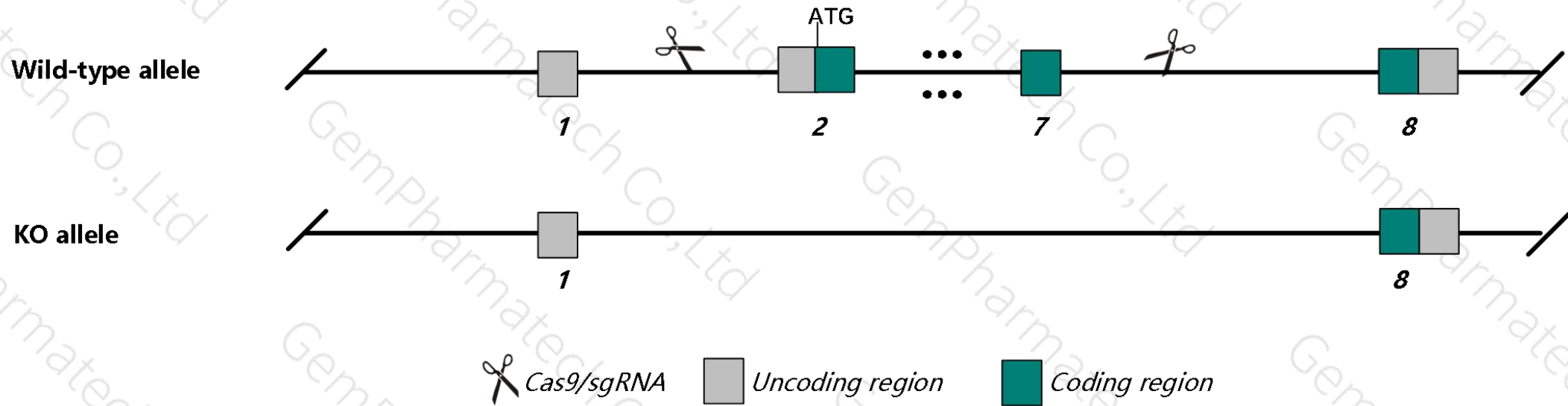
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Csgalnact2* gene. The schematic diagram is as follows:



- The *Csgalnact2* gene has 3 transcripts. According to the structure of *Csgalnact2* gene, exon2-exon7 of *Csgalnact2-201* (ENSMUST00000049344.14) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Csgalnact2* gene. The brief process is as follows: CRISPR/Cas9 sy

- According to the existing MGI data, mice homozygous for a knock-out allele are viable and fertile with no gross abnormalities and normal skeletal morphology.
- The *Csgalnact2* 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Csgalnact2 chondroitin sulfate N-acetylgalactosaminyltransferase 2 [Mus musculus (house mouse)]

Gene ID: 78752, updated on 13-Mar-2020

Summary



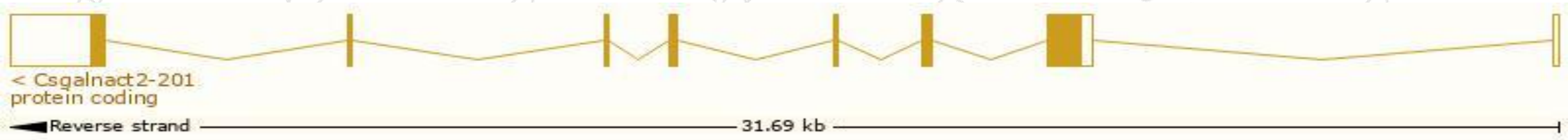
Official Symbol	Csgalnact2 provided by MGI
Official Full Name	chondroitin sulfate N-acetylgalactosaminyltransferase 2 provided by MGI
Primary source	MGI:MGI:1926002
See related	Ensembl:ENSMUSG00000042042
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4632415D10Rik, Galnact2
Expression	Ubiquitous expression in bladder adult (RPKM 6.5), lung adult (RPKM 4.1) and 25 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

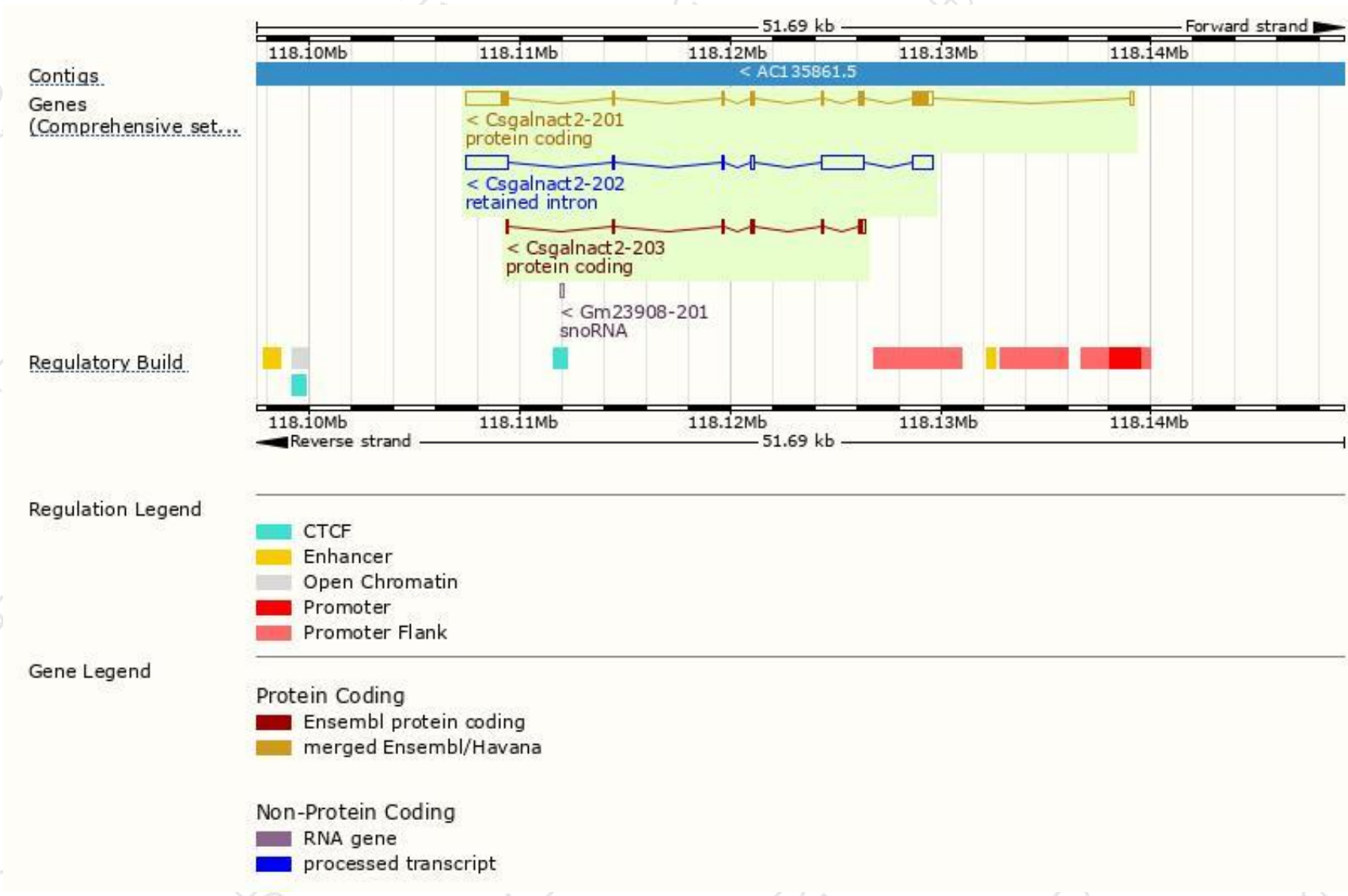
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Csgalnact2-201	ENSMUST00000049344.14	3661	542aa	Protein coding	CCDS20469	Q8C1F4	TSL:1 GENCODE basic APPRIS P1
Csgalnact2-203	ENSMUST00000136265.1	802	223aa	Protein coding	-	D3Z5Q0	CDS 3' incomplete TSL:2
Csgalnact2-202	ENSMUST00000125531.1	5252	No protein	Retained intron	-	-	TSL:2

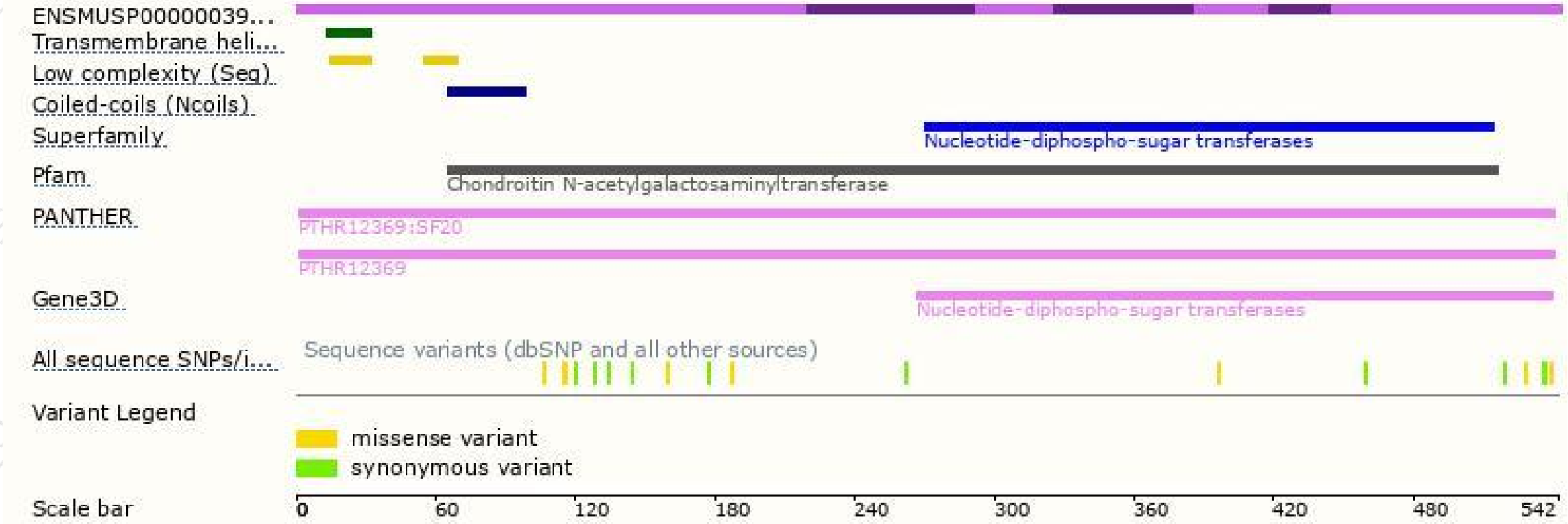
The strategy is based on the design of *Csgalnact2-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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