

Chsy3 Cas9-KO Strategy

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Project Overview

Project Name

Chsy3

Project type

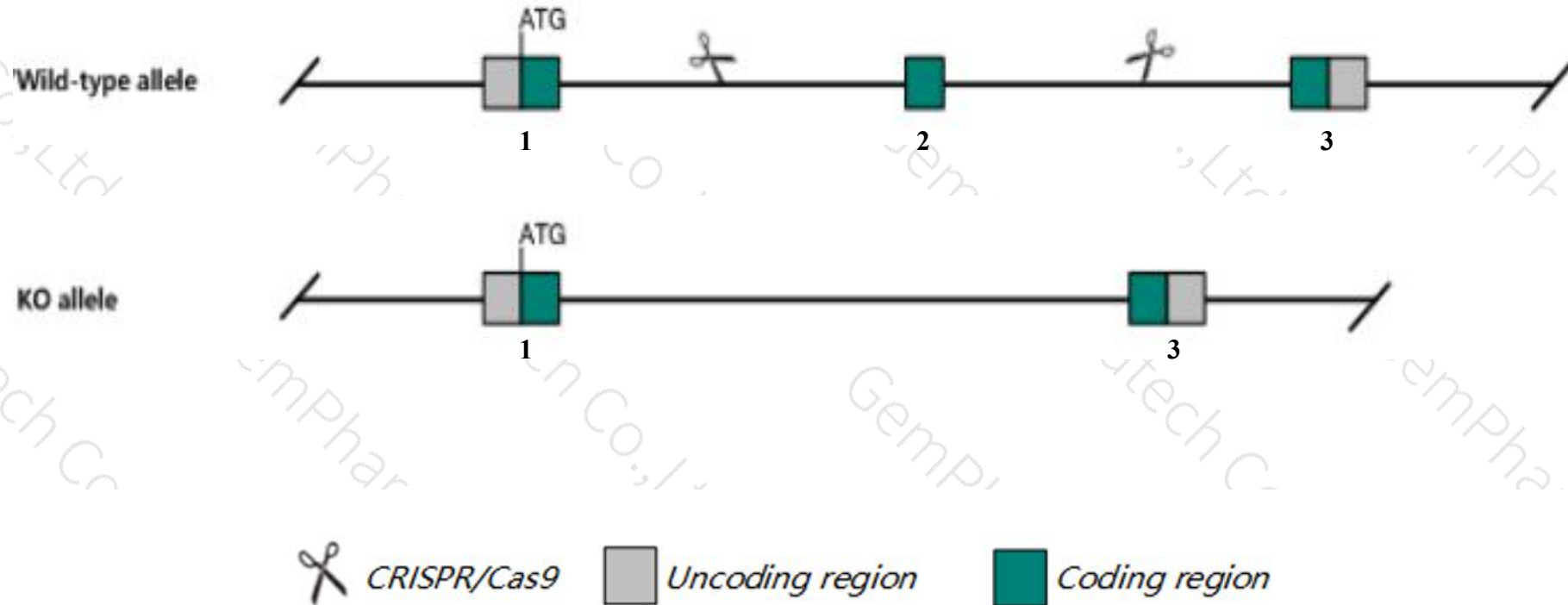
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Chsy3* gene. The schematic diagram is as follows:



- The *Chsy3* gene has 3 transcripts. According to the structure of *Chsy3* gene, exon2 of *Chsy3-201* (ENSMUST00000080721.5) transcript is recommended as the knockout region. The region contains 284bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Chsy3* 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 *Chsy3* gene is located on the Chr18. 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)

Chsy3 chondroitin sulfate synthase 3 [Mus musculus (house mouse)]

Gene ID: 78923, updated on 13-Mar-2020

Summary



Official Symbol	Chsy3 provided by MGI
Official Full Name	chondroitin sulfate synthase 3 provided by MGI
Primary source	MGI:MGI:1926173
See related	Ensembl:ENSMUSG00000058152
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	4833446K15Rik, A1662215
Expression	Broad expression in placenta adult (RPKM 3.3), limb E14.5 (RPKM 3.1) and 23 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
Chsy3-201	ENSMUST00000080721.5	3572	884aa	Protein coding	CCDS37829	Q5DTK1	TSL:1 GENCODE basic APPRIS P1
Chsy3-203	ENSMUST00000238155.1	4655	884aa	Nonsense mediated decay	-	Q5DTK1	
Chsy3-202	ENSMUST00000237594.1	3841	No protein	Retained intron	-	-	

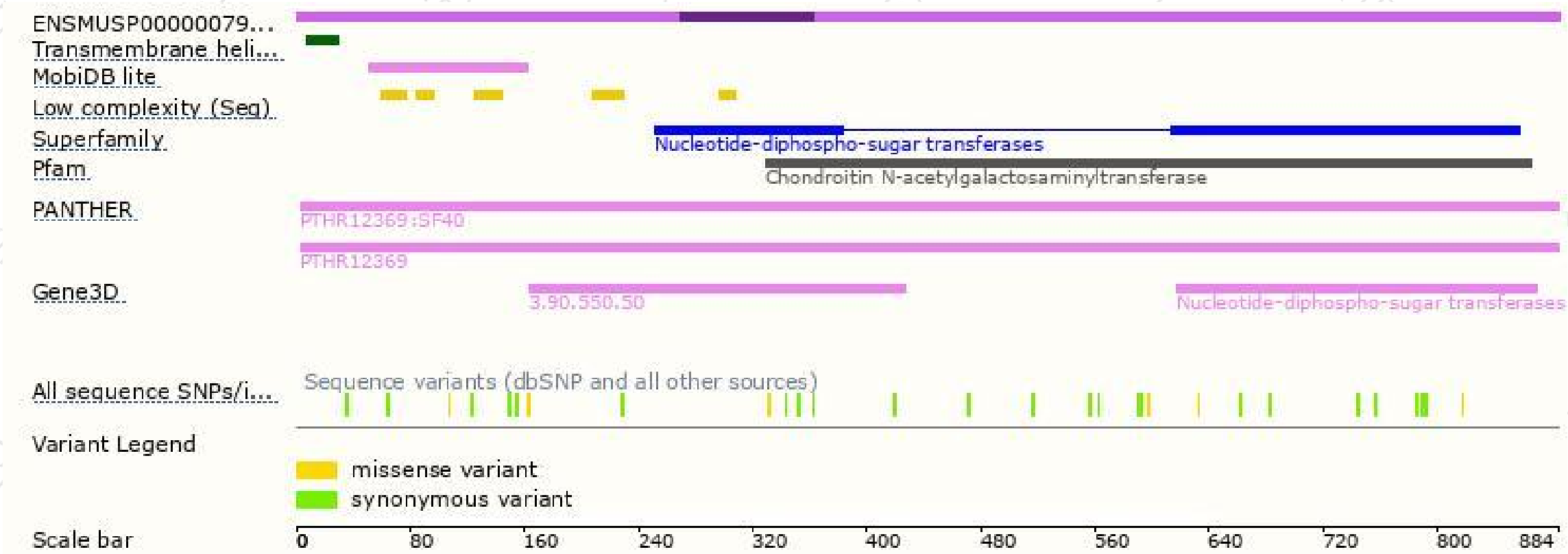
The strategy is based on the design of *Chsy3-201* transcript,the transcription is shown below:



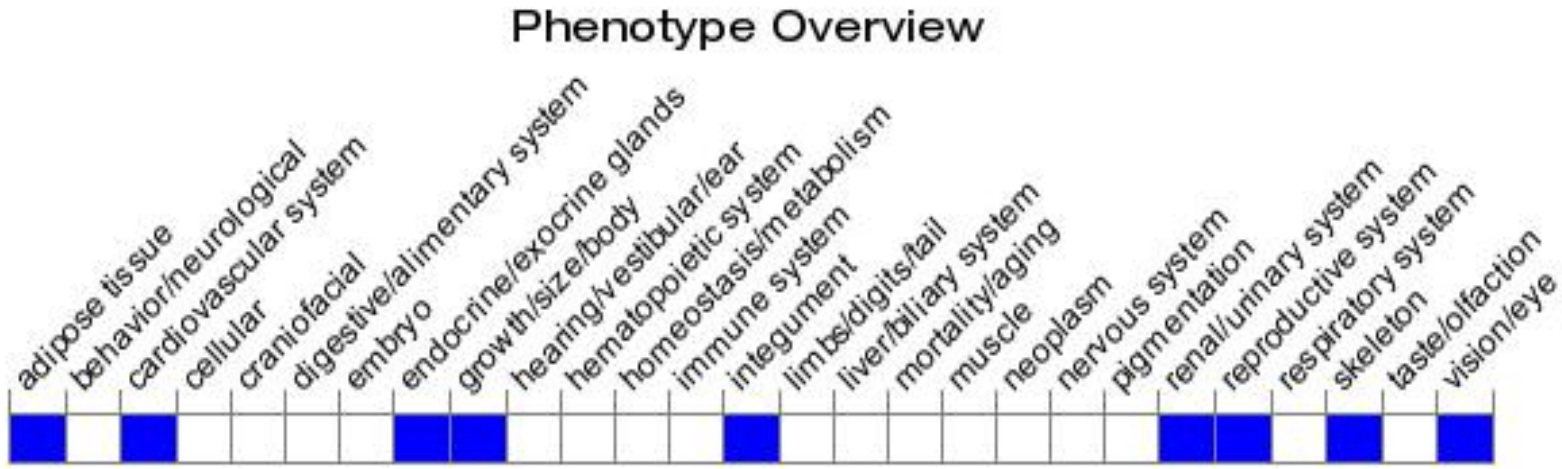
Genomic location distribution



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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