

Chst5 Cas9-KO Strategy

Designer:

JiaYu

Reviewer:

Xiaojing Li

Design Date:

2020-3-3

Project Overview

Project Name

Chst5

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Chst5* gene. The schematic diagram is as follows:



- The *Chst5* gene has 1 transcript. According to the structure of *Chst5* gene, exon2 of *Chst5-201* (ENSMUST00000034430.5) transcript is recommended as the knockout region. The region contains all of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Chst5* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Homozygous mutation of this gene results in thinner corneas that show abnormally close collagen fibrillar packing.
- The *Chst5* gene is located on the Chr8. 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)

Chst5 carbohydrate (N-acetylglucosamine 6-O) sulfotransferase 5 [Mus musculus (house mouse)]

Gene ID: 56773, updated on 31-Jan-2019

Summary



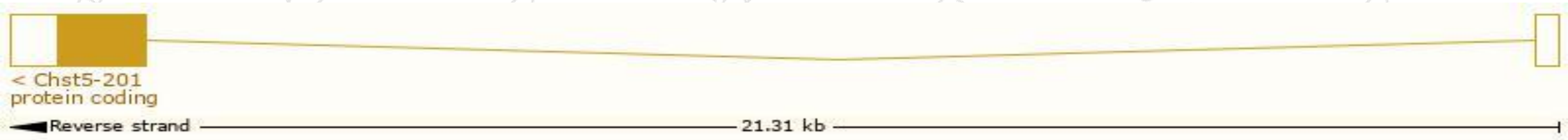
Official Symbol	Chst5 provided by MGI
Official Full Name	carbohydrate (N-acetylglucosamine 6-O) sulfotransferase 5 provided by MGI
Primary source	MGI:MGI:1931825
See related	Ensembl:ENSMUSG000000031952
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AI173964, GST-4, Gn6st-3, I-GlcNAc-6-ST
Expression	Biased expression in limb E14.5 (RPKM 5.5), lung adult (RPKM 3.7) and 12 other tissues See more

Transcript information (Ensembl)

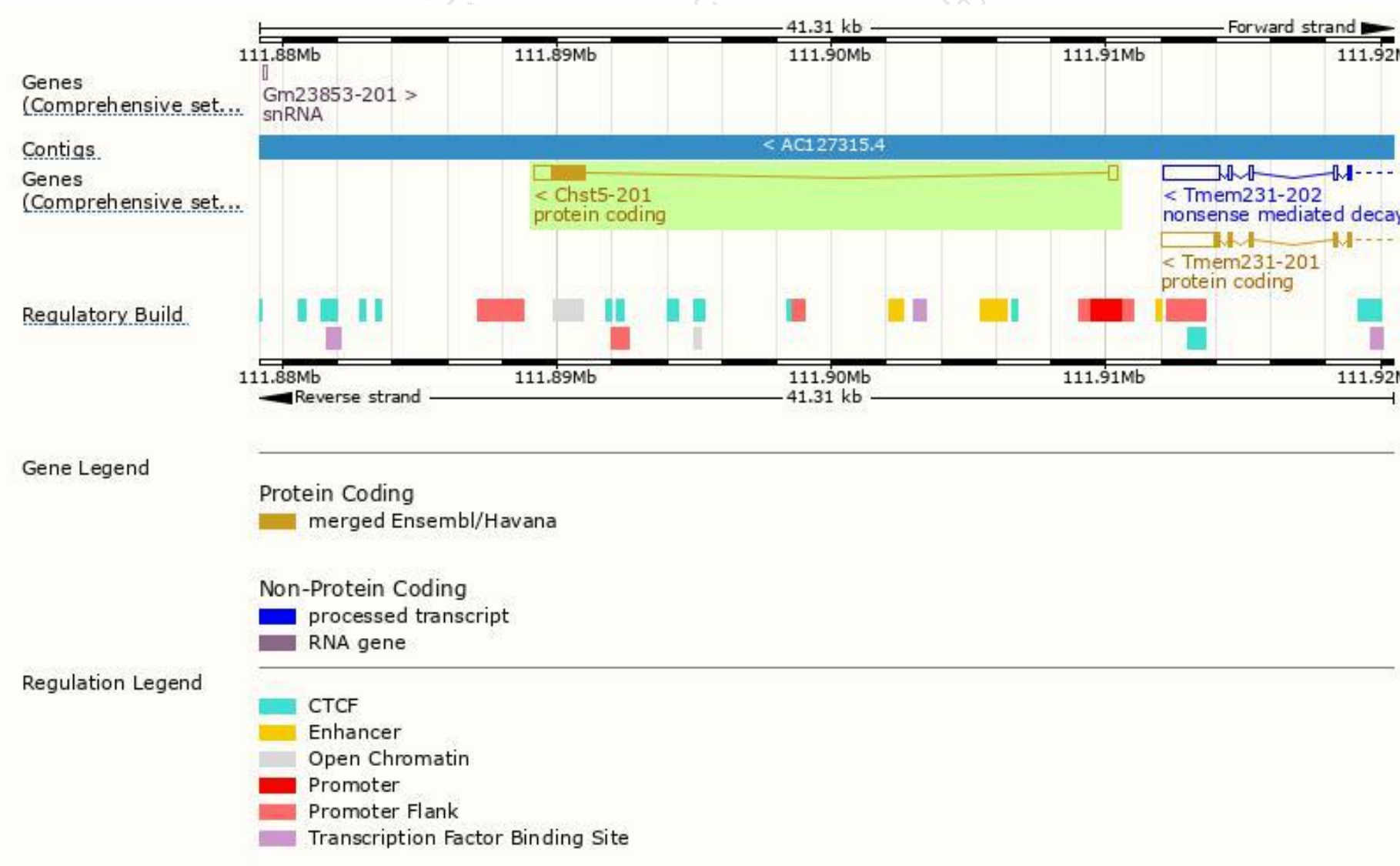
The gene has 1 transcript,and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Chst5-201	ENSMUST00000034430.5	2182	395aa	Protein coding	CCDS22682	Q9QUP4	TSL:1 GENCODE basic APPRIS P1

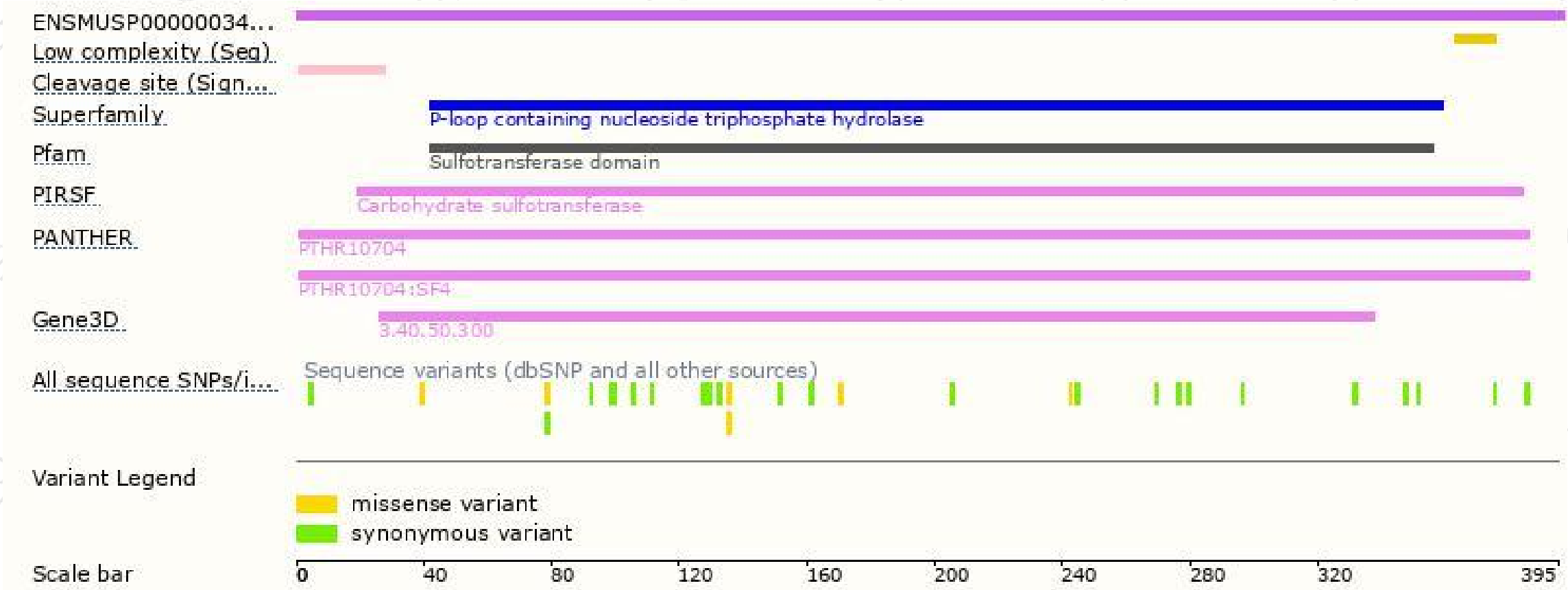
The strategy is based on the design of *Chst5-201* transcript,The transcription is shown below



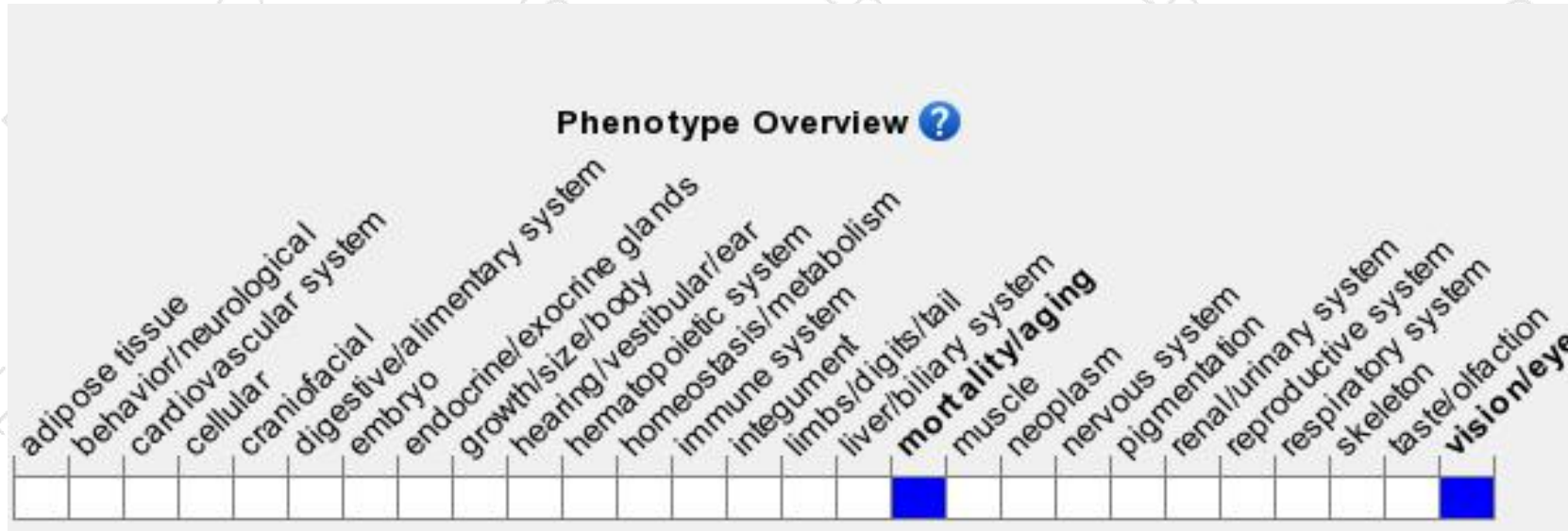
Genomic location distribution



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/>).

According to the existing MGI data, Homozygous mutation of this gene results in thinner corneas that show abnormally close collagen fibrillar packing.

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

Tel: 400-9660890

