Gstcd Cas9-KO Strategy
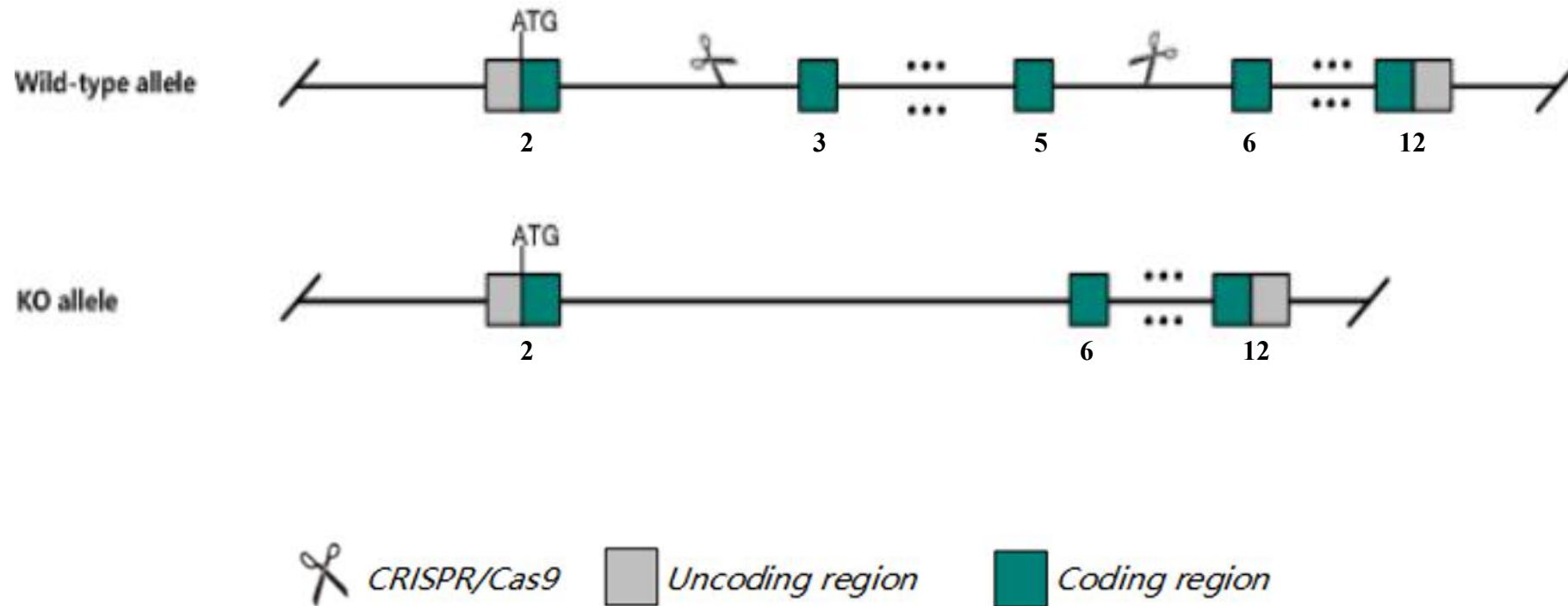
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Reviewer   Xueting Zhang
Design Date: 2020-3-11

Project Overview

Project Name	***Gstcd***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

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

The *Gstcd* gene has 6 transcripts. According to the structure of *Gstcd* gene, exon3-exon5 of *Gstcd-201* (ENSMUST00000029651.10) transcript is recommended as the knockout region.The region contains 814bp coding sequence. Knock out the region will result in disruption of protein function.

In this project we use CRISPR/Cas9 technology to modify *Gstcd* gene. The brief process is as follows: CRISPR/Cas9 system w

The *Gstcd* gene is located on the Chr3. 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

Gstcd   glutathione S-transferase, C-terminal domain containing [*Mus musculus* (house mouse)]

Gene ID: 67553, updated on 24-Oct-2019

▲ Summary

|	
Official Symbol	Gstcd provided by MGI
Official Full Name	glutathione S-transferase, C-terminal domain containing provided by MGI
Primary source	MGI:MGI:1914803
See related	Ensembl:ENSMUSG00000028018
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	4933434L15Rik
Expression	Ubiquitous expression in CNS E11.5 (RPKM 7.0), testis adult (RPKM 6.2) and 27 other tissues See more
Orthologs	human all

▲ Genomic context

Location: 3; 3 G3

See Gstcd in Genome Data Viewer

Exon count: 14

Transcript information　Ensembl

The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gstcd-201	ENSMUST00000029651.10	3503	634aa	Protein coding	CCDS17847	Q5RL51	TSL:1 GENCODE basic APPRIS P1
Gstcd-202	ENSMUST00000080583.5	2394	634aa	Protein coding	CCDS17847	Q5RL51	TSL:1 GENCODE basic APPRIS P1
Gstcd-205	ENSMUST00000162926.1	1927	No protein	Retained intron	-	-	TSL:1
Gstcd-206	ENSMUST00000197381.1	1704	No protein	Retained intron	-	-	TSL:NA
Gstcd-203	ENSMUST00000160402.7	639	No protein	Retained intron	-	-	TSL:3
Gstcd-204	ENSMUST00000161577.7	1975	No protein	lncRNA	-	-	TSL:1

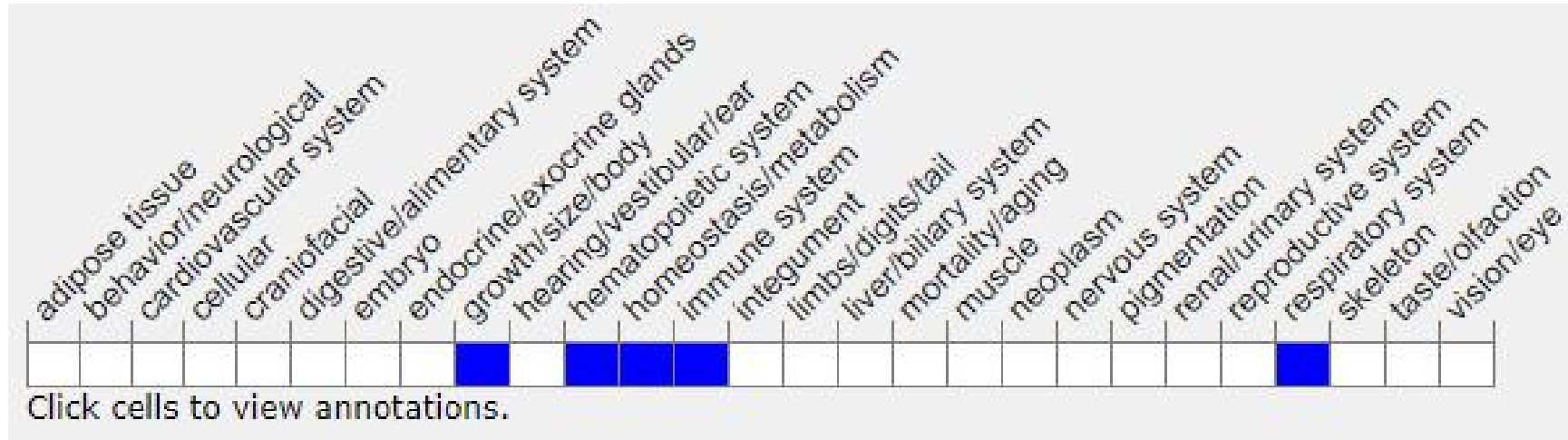The strategy is based on the design of *Gstcd-201* transcript,The transcription is shown below

< Gstcd-201
protein coding
◄— Reverse strand
|— 110.07 kb —|
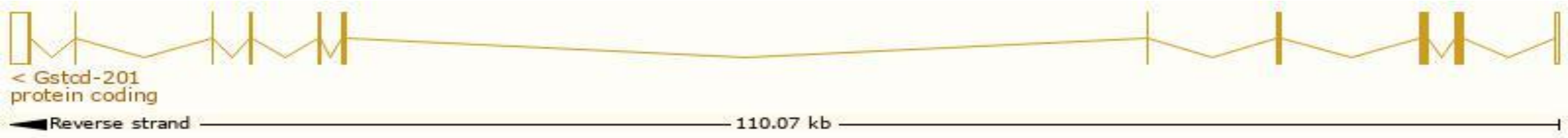
Protein domain
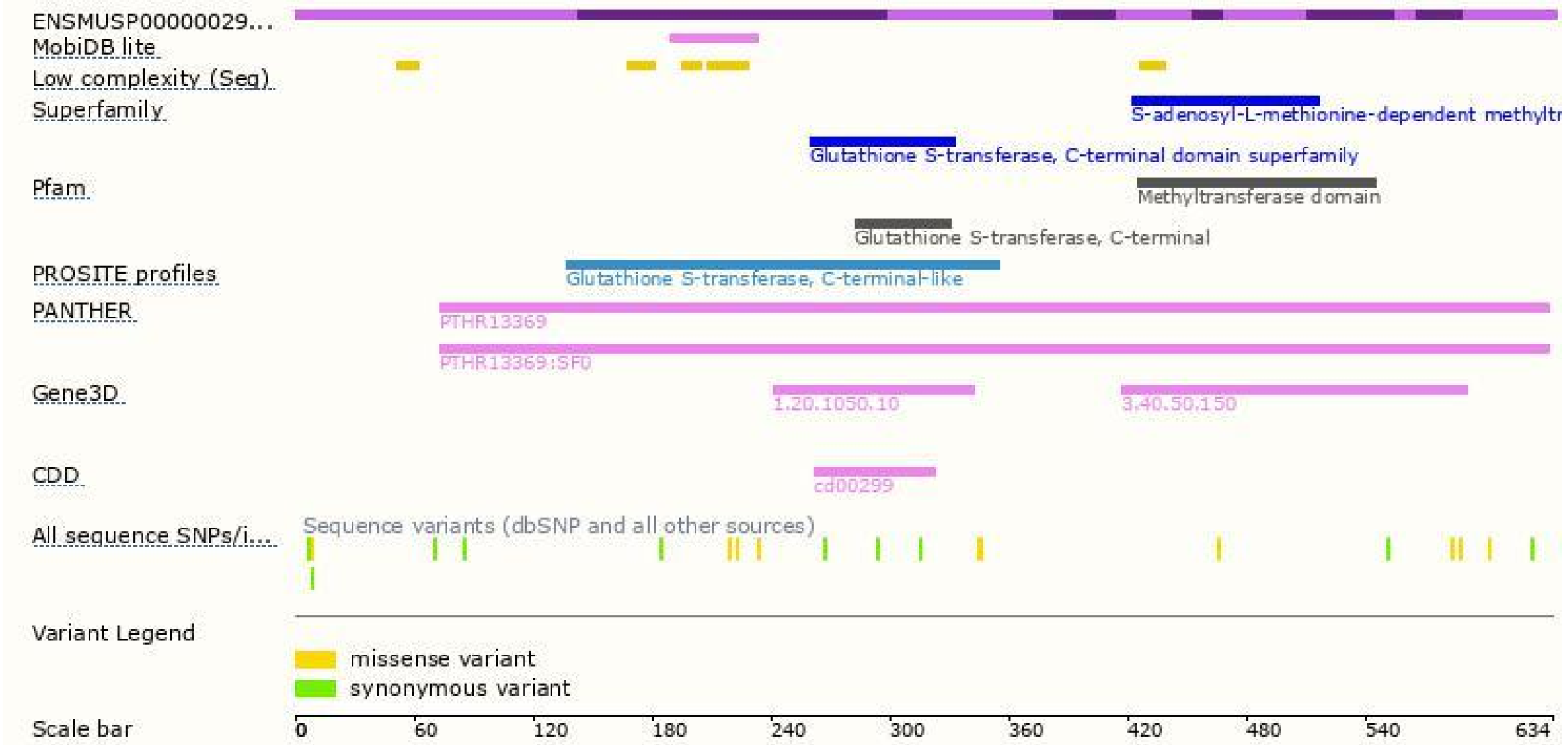
Mouse phenotype description(MGI)

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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