

***Unc5b* Cas9-KO Strategy**

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Project Overview

Project Name

Unc5b

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Unc5b* gene. The schematic diagram is as follows:



- The *Unc5b* gene has 3 transcripts. According to the structure of *Unc5b* gene, exon2-exon13 of *Unc5b-201* (ENSMUST00000077925.6) transcript is recommended as the knockout region. The region contains 2096bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Unc5b* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a severely hypomorphic allele exhibit background sensitive lethality during organogenesis.
- The *Unc5b* gene is located on the Chr10. 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)

Unc5b unc-5 netrin receptor B [*Mus musculus* (house mouse)]

Gene ID: 107449, updated on 14-Aug-2019

Summary

Official Symbol Unc5b provided by [MGI](#)
Official Full Name unc-5 netrin receptor B provided by [MGI](#)
Primary source [MGI:MGI:894703](#)
See related [Ensembl:ENSMUSG00000020099](#)
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 Unc5h2; A630020F16; D10Bwg0792e; 6330415E02Rik
Expression Broad expression in small intestine adult (RPKM 21.1), colon adult (RPKM 20.9) and 23 other tissues [See more](#)
Orthologs [human](#) [all](#)

Genomic context

Location: 10 B4; 10 31.52 cM

[See Unc5b in Genome Data Viewer](#)

Exon count: 17

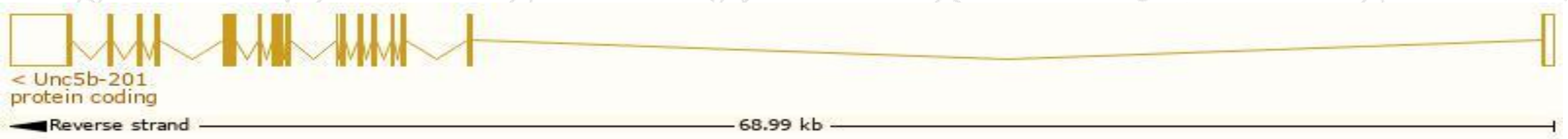
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	10	NC_000076.6 (60762594..60831581, complement)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	10	NC_000076.5 (60225343..60294329, complement)

Transcript information (Ensembl)

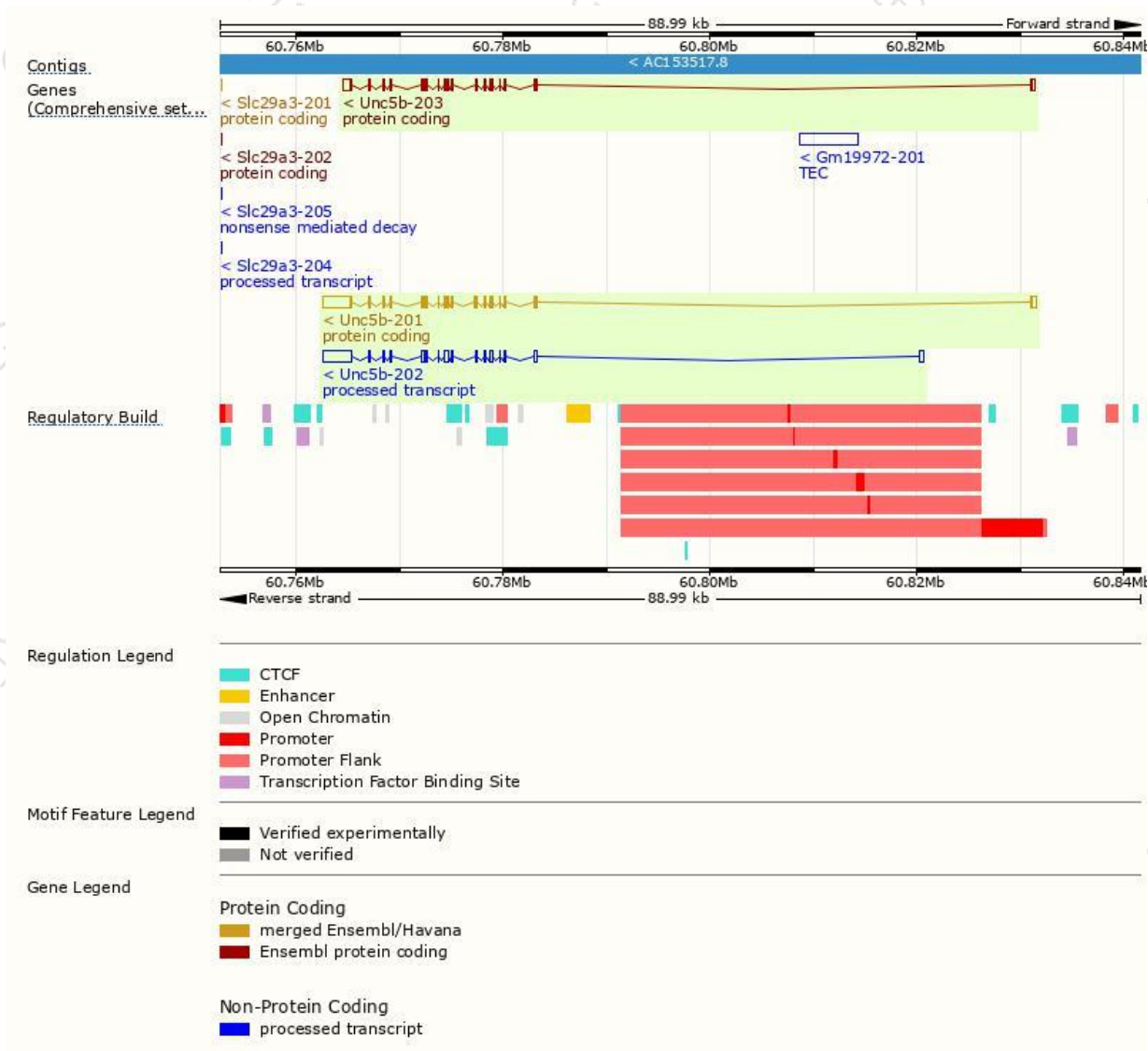
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Unc5b-201	ENSMUST00000077925.6	5869	945aa	Protein coding	CCDS23872	Q8K1S3	TSL:1 GENCODE basic APPRIS P2
Unc5b-203	ENSMUST00000218637.1	3653	934aa	Protein coding	-	Q8K1S3	TSL:1 GENCODE basic APPRIS ALT1
Unc5b-202	ENSMUST00000218316.1	5713	No protein	Processed transcript	-	-	TSL:1

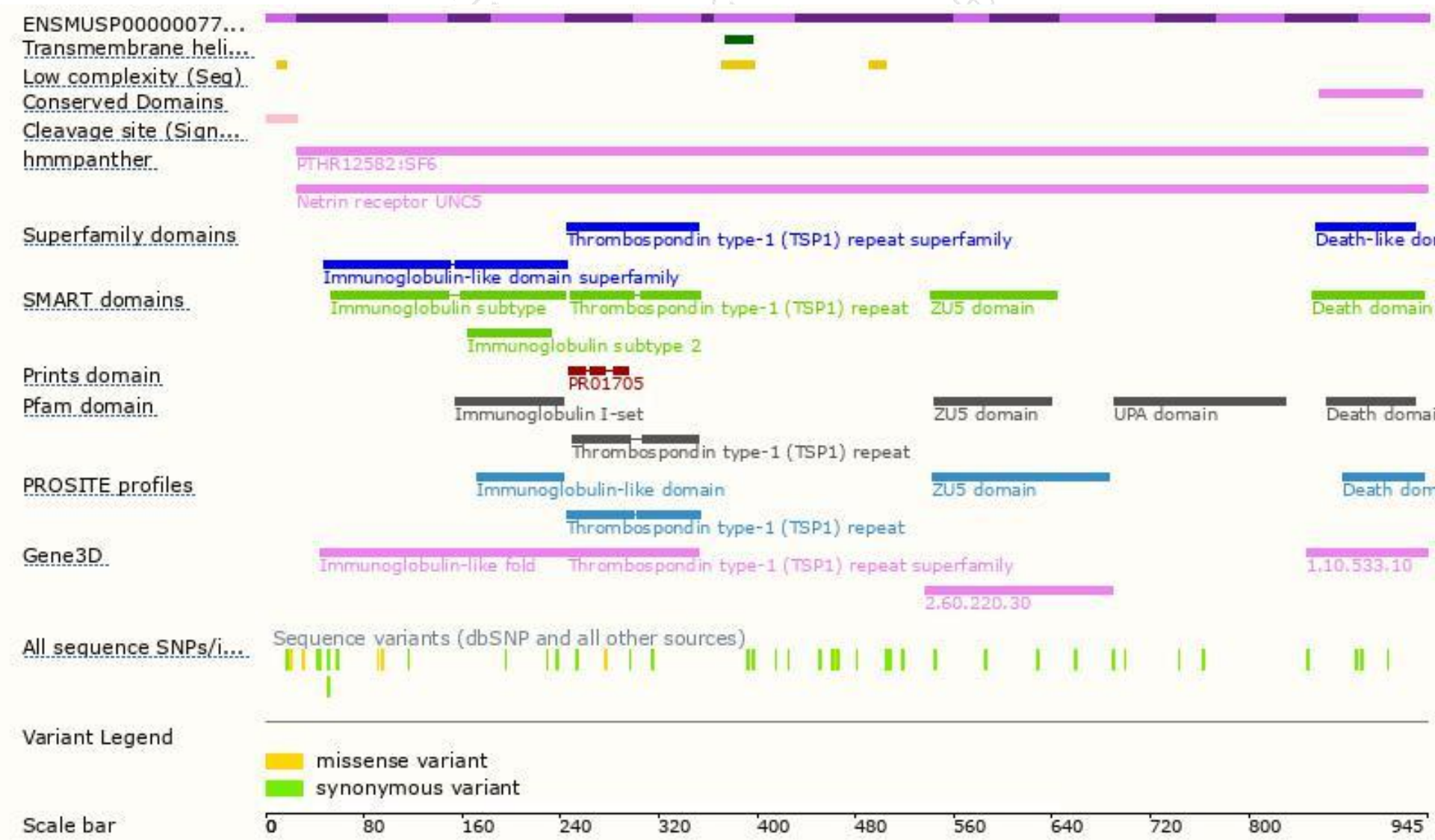
The strategy is based on the design of *Unc5b-201* transcript,The transcription is shown below



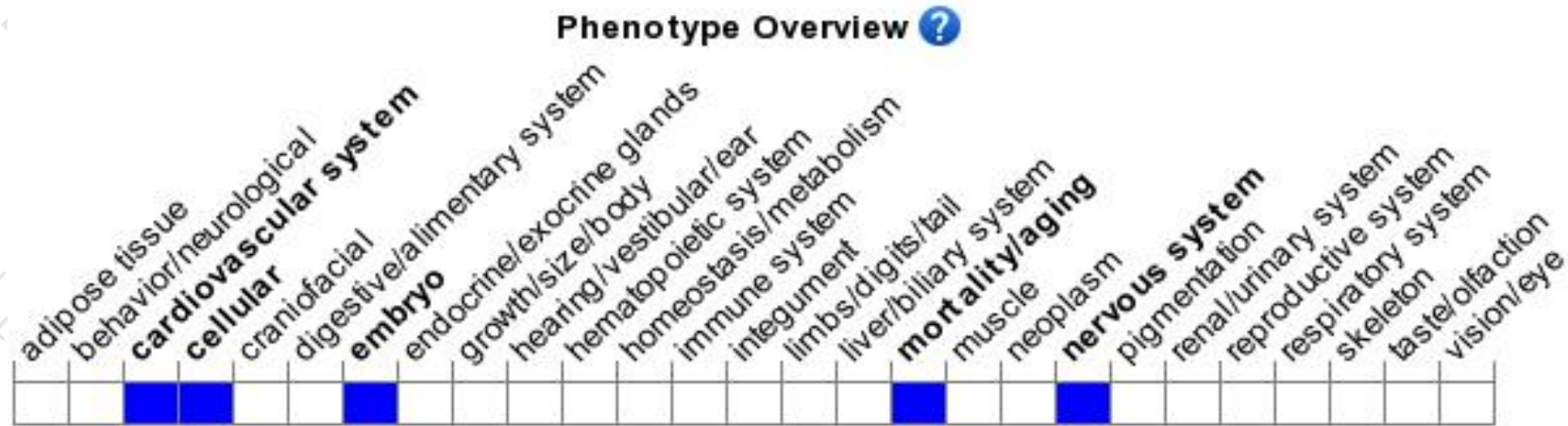
Genomic location distribution



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, Mice homozygous for a severely hypomorphic allele exhibit background sensitive lethality during organogenesis.

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

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