Snx3 Cas9-KO Strategy

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Project Overview

Project Name	*Snx3*
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Snx3* gene. The schematic diagram is as follows:

Technical routes

➢ The *Snx3* gene has 3 transcripts. According to the structure of *Snx3* gene, exon2-exon3 of *Snx3-201* (ENSMUST00000019939.11) transcript is recommended as the knockout region.The region contains 221bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Snx3* gene. The brief process is as follows: CRISPR/Cas9 system v

Notice

➢ The *Snx3* 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）

Snx3   sorting nexin 3 [*Mus musculus* (house mouse)]

Gene ID: 54198, updated on 12-Nov-2019

▲ Summary

Official Symbol	Snx3 provided by MGI
Official Full Name	sorting nexin 3 provided by MGI
Primary source	MGI:MGI:1860188
See related	Ensembl:ENSMUSG00000019804
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	SDP3
Expression	Ubiquitous expression in placenta adult (RPKM 150.6), testis adult (RPKM 118.9) and 28 other tissues See more
Orthologs	human all

▲ Genomic context

Location: 10 B2; 10 22.89 cM

See Snx3 in Genome Data Viewer

Exon count: 4

| Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	10	NC_000076.6 (42502054..42535369)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	10	NC_000076.5 (42221860..42255175)

Transcript information（Ensembl）

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

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Snx3-201	ENSMUST00000019939.11	1401	162aa	Protein coding	CCDS23812	Q78ZM0	TSL:1 GENCODE basic APPRIS P1
Snx3-202	ENSMUST00000105499.1	1057	130aa	Protein coding	-	D3Z789	TSL:5 GENCODE basic
Snx3-203	ENSMUST00000105500.7	753	140aa	Protein coding	-	D3Z6Z0	TSL:5 GENCODE basic

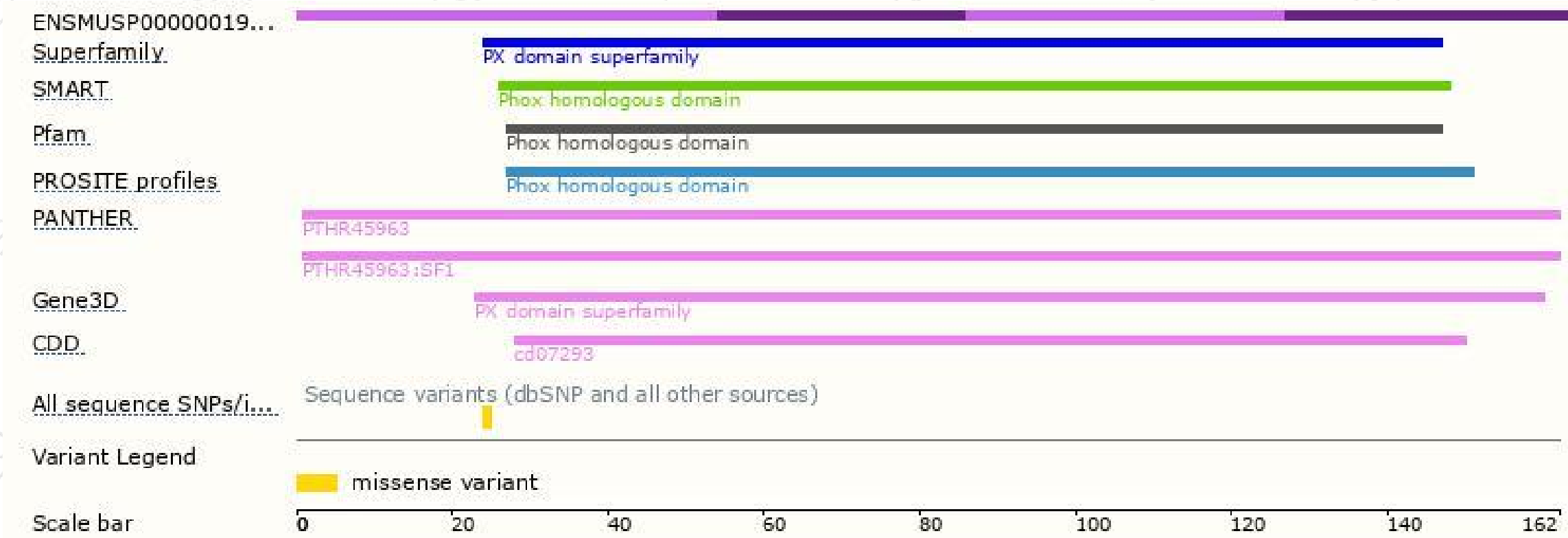The strategy is based on the design of *Snx3-201* transcript,The transcription is shown below
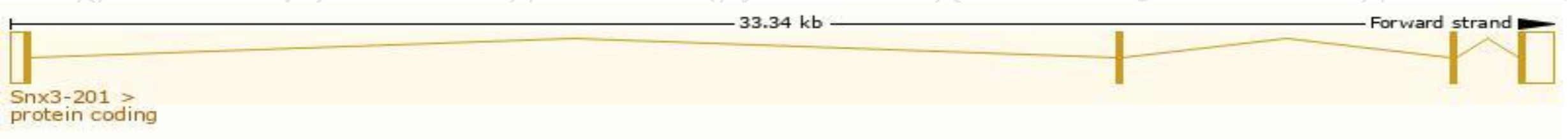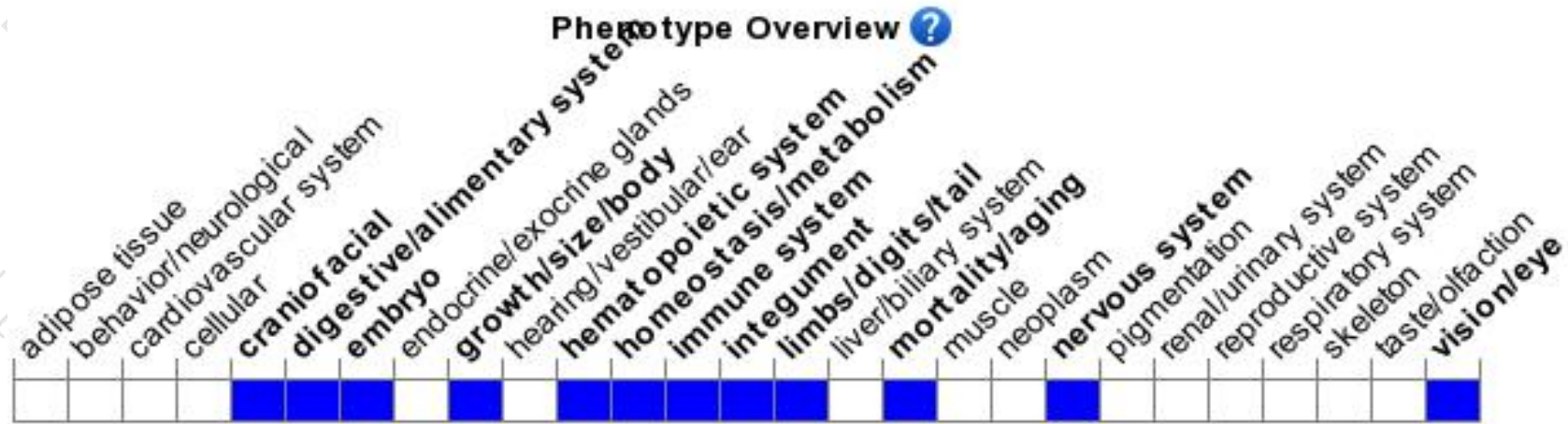
Genomic location distribution
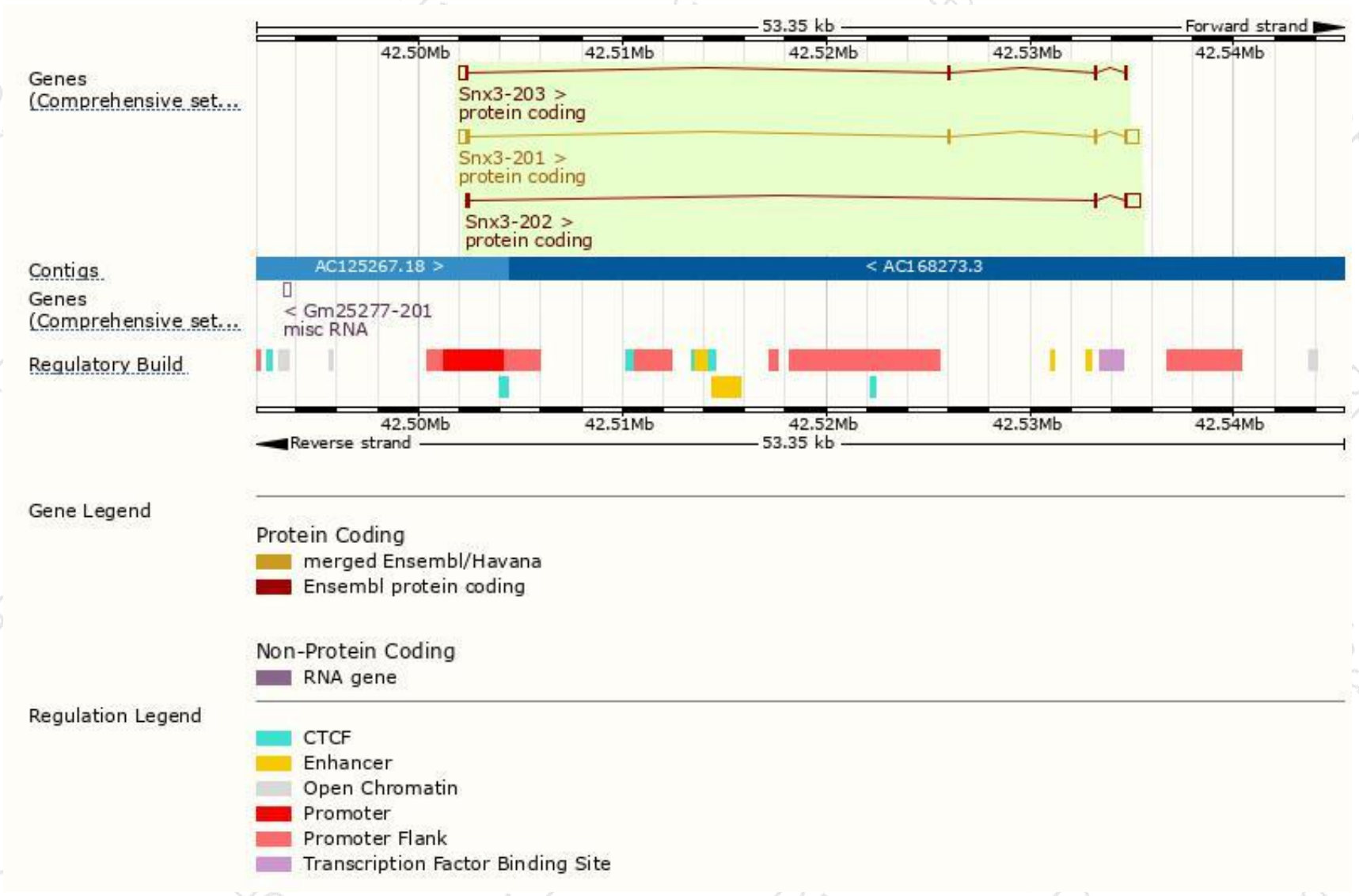
Protein domain

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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