Slitrk3 Cas9-KO Strategy

Designer: JiaYu

Reviewer: Xiaojing Li

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Project Overview

Project Name	***Slitrk3***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slitrk3* gene. The schematic diagram is as follows:

Technical routes

➢ The *Slitrk3* gene has 2 transcripts. According to the structure of *Slitrk3* gene, exon2 of *Slitrk3-202* (ENSMUST00000192477.1) 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 *Slitrk3* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

- According to the existing MGI data,Mice homozygous for a knock-out mice exhibit reduced inhibitory synapse density, decreased miniature inhibitory postsynaptic current frequency and increased susceptibility to spontaneous and pharmacologically-induced seizures.

- The *Slitrk3* 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）

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Slitrk3 SLIT and NTRK-like family, member 3 [Mus musculus (house mouse)]

Gene ID: 386750, updated on 5-Feb-2019

Summary

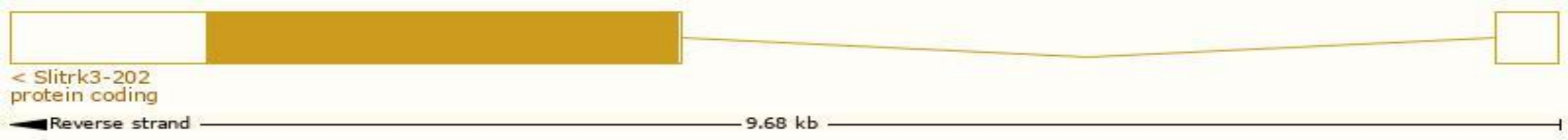
Official Symbol	Slitrk3 provided by MGI
Official Full Name	SLIT and NTRK-like family, member 3 provided by MGI
Primary source	MGI:MGI:2679447
See related	Ensembl:ENSMUSG00000048304
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	ST3
Expression	Biased expression in frontal lobe adult (RPKM 4.8), cortex adult (RPKM 4.0) and 8 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

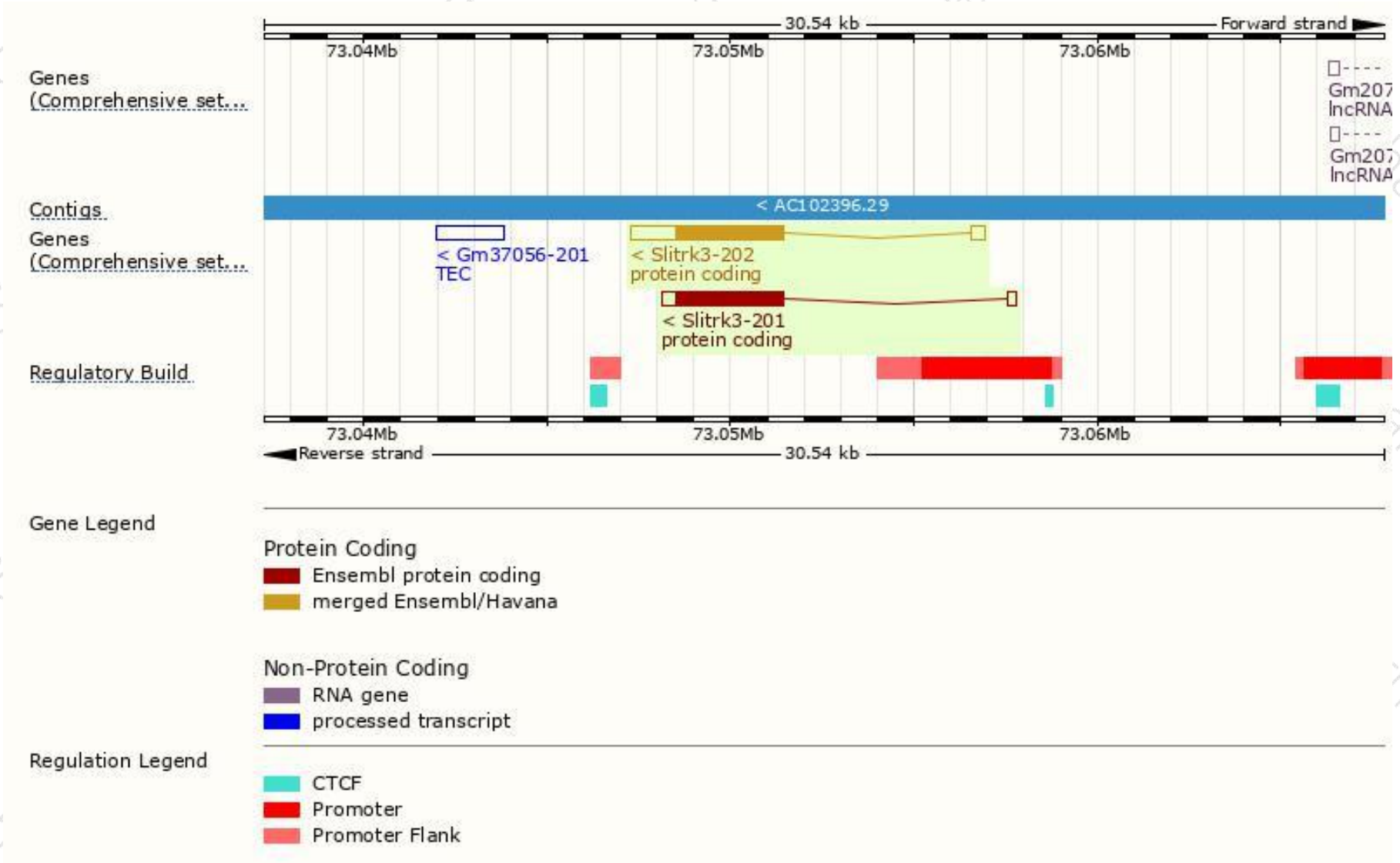
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slitrk3-202	ENSMUST00000192477.1	4592	980aa	Protein coding	CCDS17410	Q810B9	TSL:1 GENCODE basic APPRIS P1
Slitrk3-201	ENSMUST00000059407.8	3587	980aa	Protein coding	CCDS17410	Q810B9	TSL:1 GENCODE basic APPRIS P1

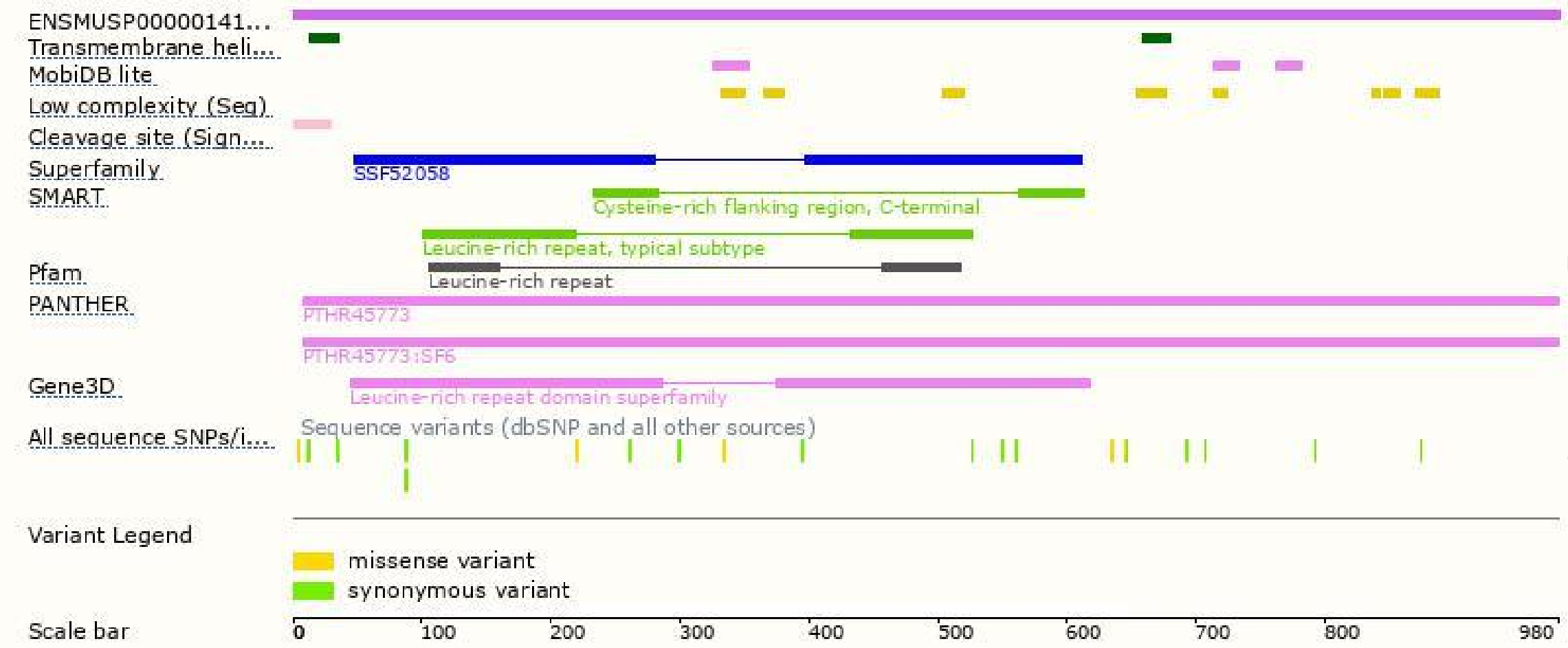
The strategy is based on the design of *Slitrk3-202* transcript,The transcription is shown below



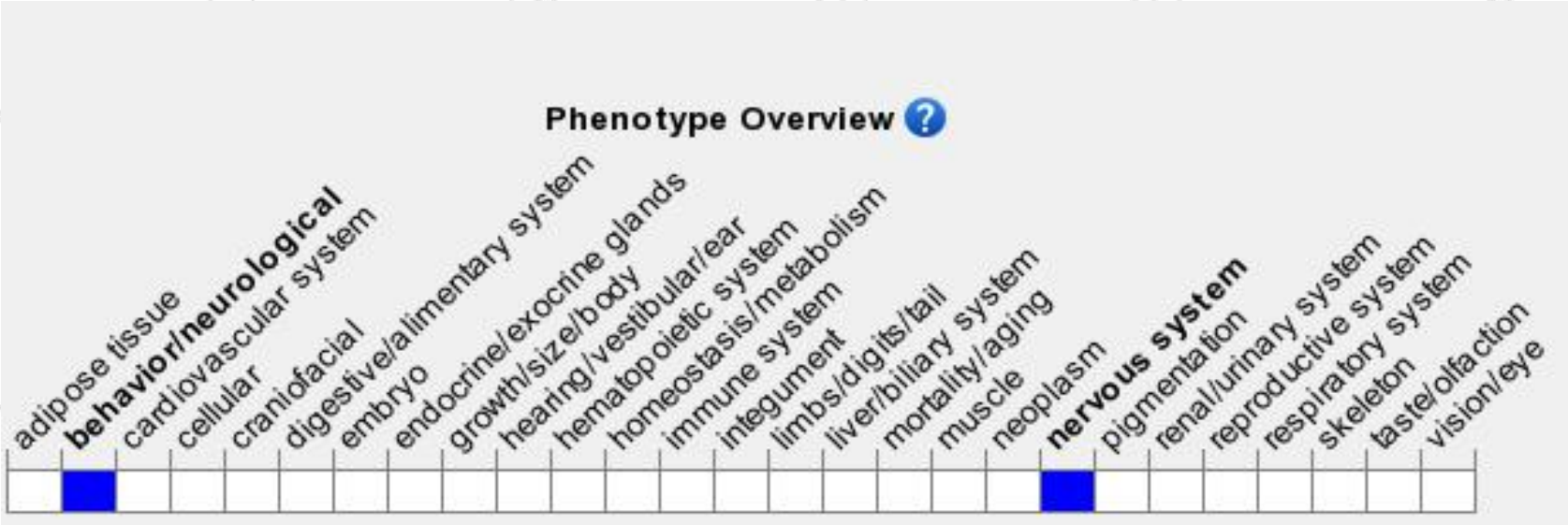
Genomic location distribution



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/).

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

Tel: 400-9660890

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GemPharmatech Co.,Ltd