Strn3 Cas9-KO Strategy

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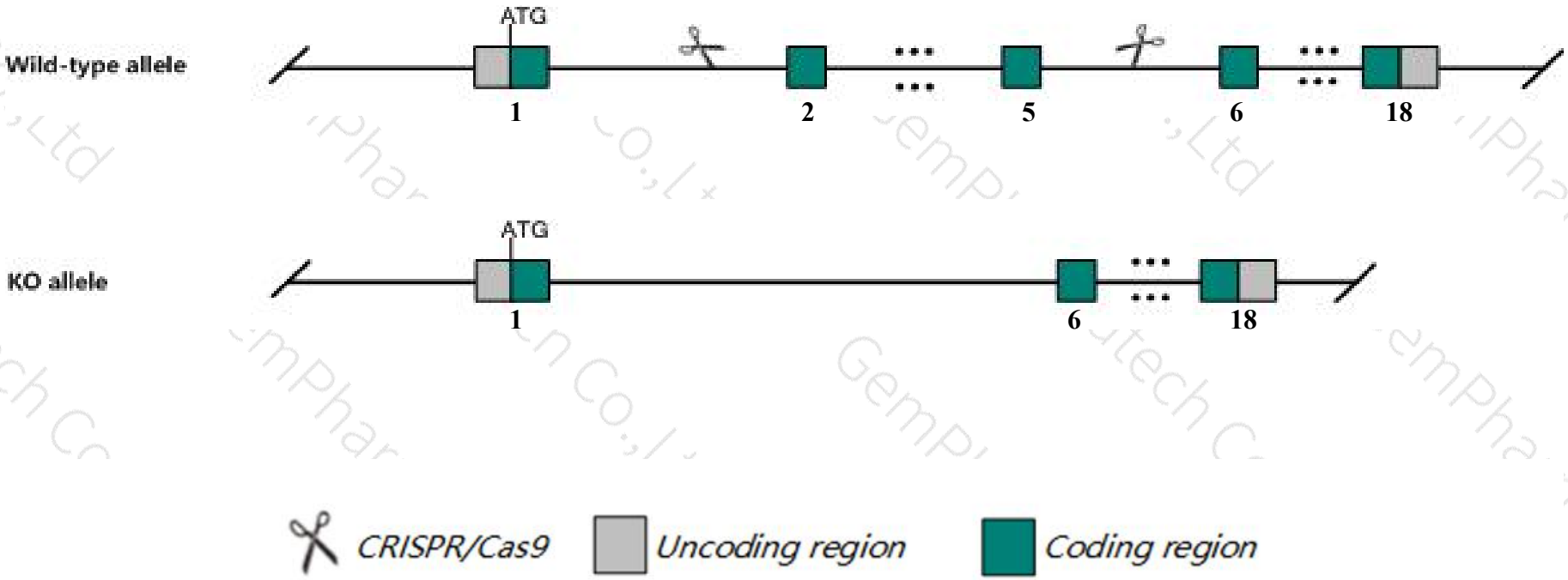
Design Date: 2019-7-22

Project Overview

Project Name	***Strn3***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Strn3* gene. The schematic diagram is as follows:



Technical routes

➢ The *Strn3* gene has 3 transcripts. According to the structure of *Strn3* gene, exon2-exon5 of *Strn3-201* (ENSMUST00000013130.14) transcript is recommended as the knockout region.The region contains 434bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Strn3* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

- The *Strn3* gene is located on the Chr12. 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.
- Transcript *Strn3*-203 may not be affected.
- 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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Strn3 striatin, calmodulin binding protein 3 [Mus musculus (house mouse)]

Gene ID: 94186, updated on 5-Mar-2019

Summary

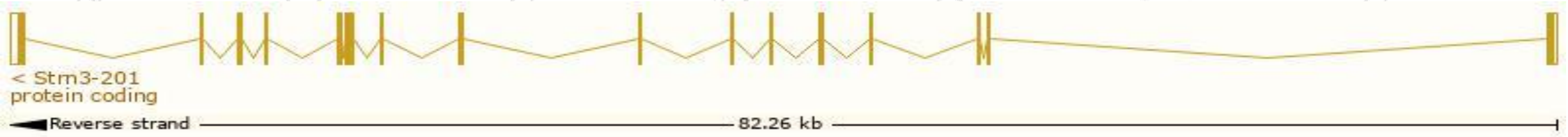
Official Symbol	Strn3 provided by MGI
Official Full Name	striatin, calmodulin binding protein 3 provided by MGI
Primary source	MGI:MGI:2151064
See related	Ensembl:ENSMUSG00000020954
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Gs2na, SG2NA
Expression	Ubiquitous expression in CNS E11.5 (RPKM 20.8), bladder adult (RPKM 19.5) and 28 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

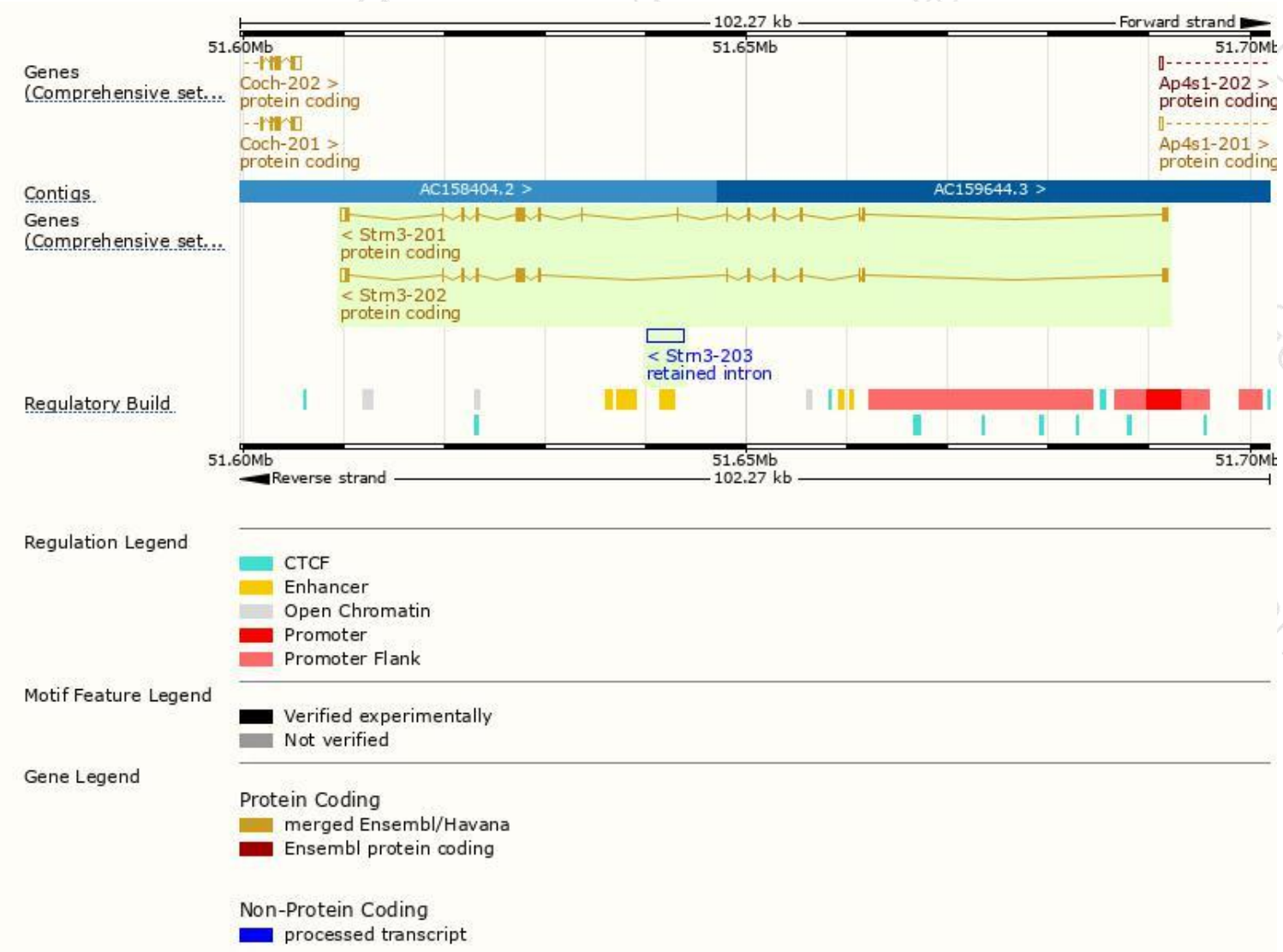
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Strn3-201	ENSMUST00000013130.14	3046	796aa	Protein coding	CCDS36440	Q9ERG2	TSL:1 GENCODE basic APPRIS P3
Strn3-202	ENSMUST00000169503.3	2791	712aa	Protein coding	CCDS49063	B2RQS1	TSL:1 GENCODE basic APPRIS ALT1
Strn3-203	ENSMUST00000218212.1	3701	No protein	Retained intron	-	-	TSL:NA

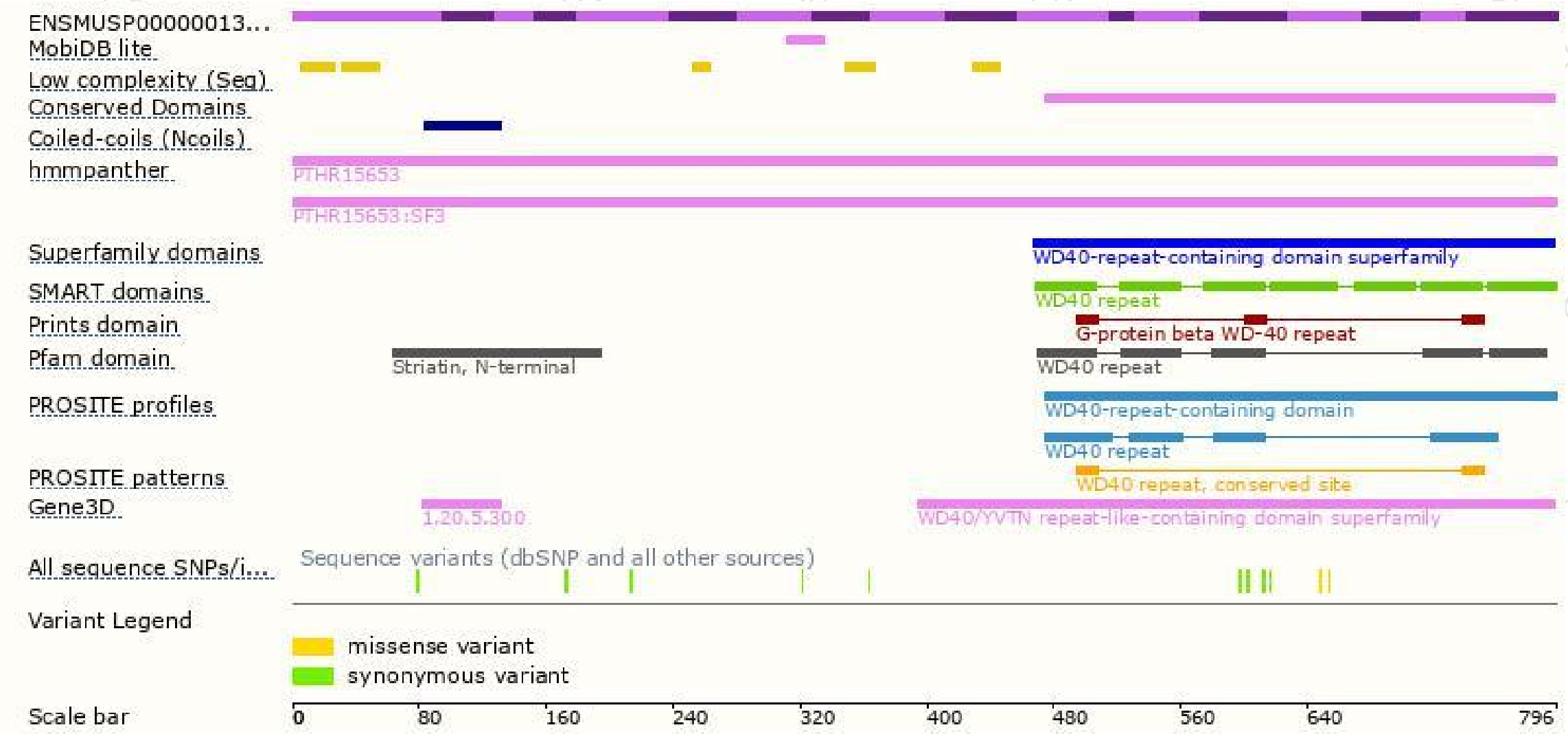
The strategy is based on the design of *Strn3-201* transcript,The transcription is shown below



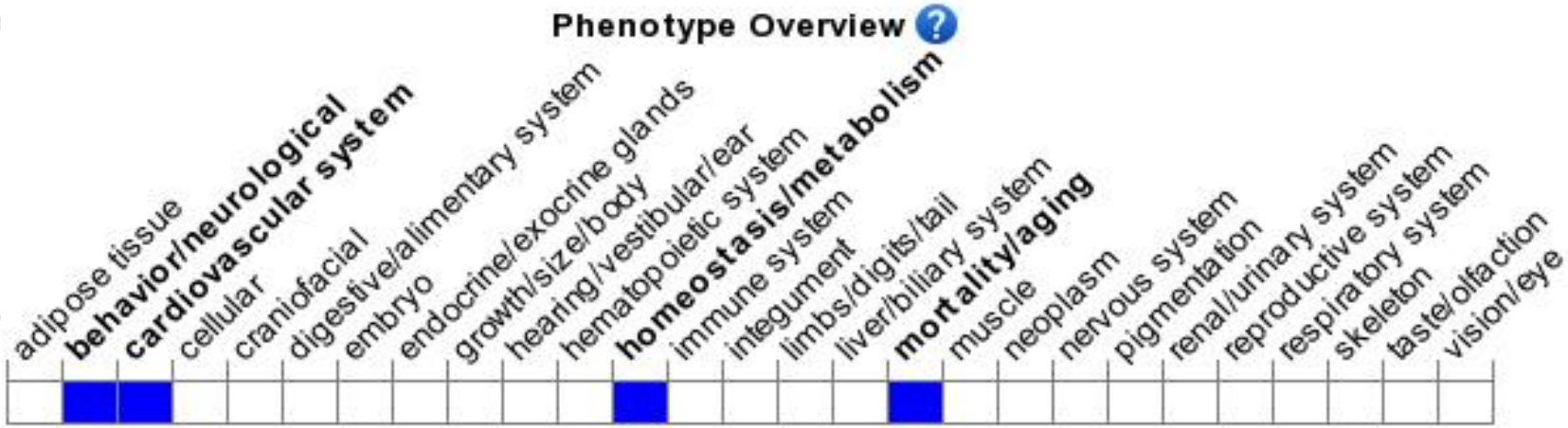
Genomic location distribution



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/).

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

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