

***Stmn2* Cas9-KO Strategy**

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Reviewer:

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Project Overview

Project Name

Stmn2

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Stmn2* gene. The schematic diagram is as follows:



- The *Stmn2* gene has 4 transcripts. According to the structure of *Stmn2* gene, exon2-exon3 of *Stmn2-201* (ENSMUST00000029002.8) transcript is recommended as the knockout region. The region contains 269bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Stmn2* gene. The brief process is as follows: CRISPR/Cas9 system

- Transcript *Stmn2*-203 lncRNA may not be affected.
- The *Stmn2* 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.

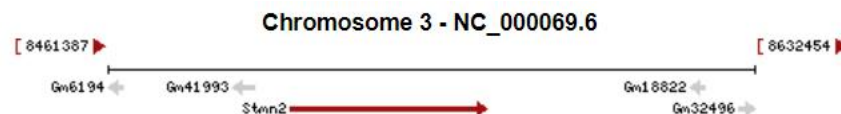
Gene information (NCBI)

Stmn2 stathmin-like 2 [*Mus musculus* (house mouse)]

Gene ID: 20257, updated on 3-Nov-2019

Summary

Official Symbol	Stmn2 provided by MGI
Official Full Name	stathmin-like 2 provided by MGI
Primary source	MGI:MGI:98241
See related	Ensembl:ENSMUSG000000027500
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	SCG10; Stmb2; Scgn10; A159727
Expression	Biased expression in CNS E18 (RPKM 490.1), whole brain E14.5 (RPKM 244.1) and 5 other tissues See more
Orthologs	human all



Transcript information (Ensembl)

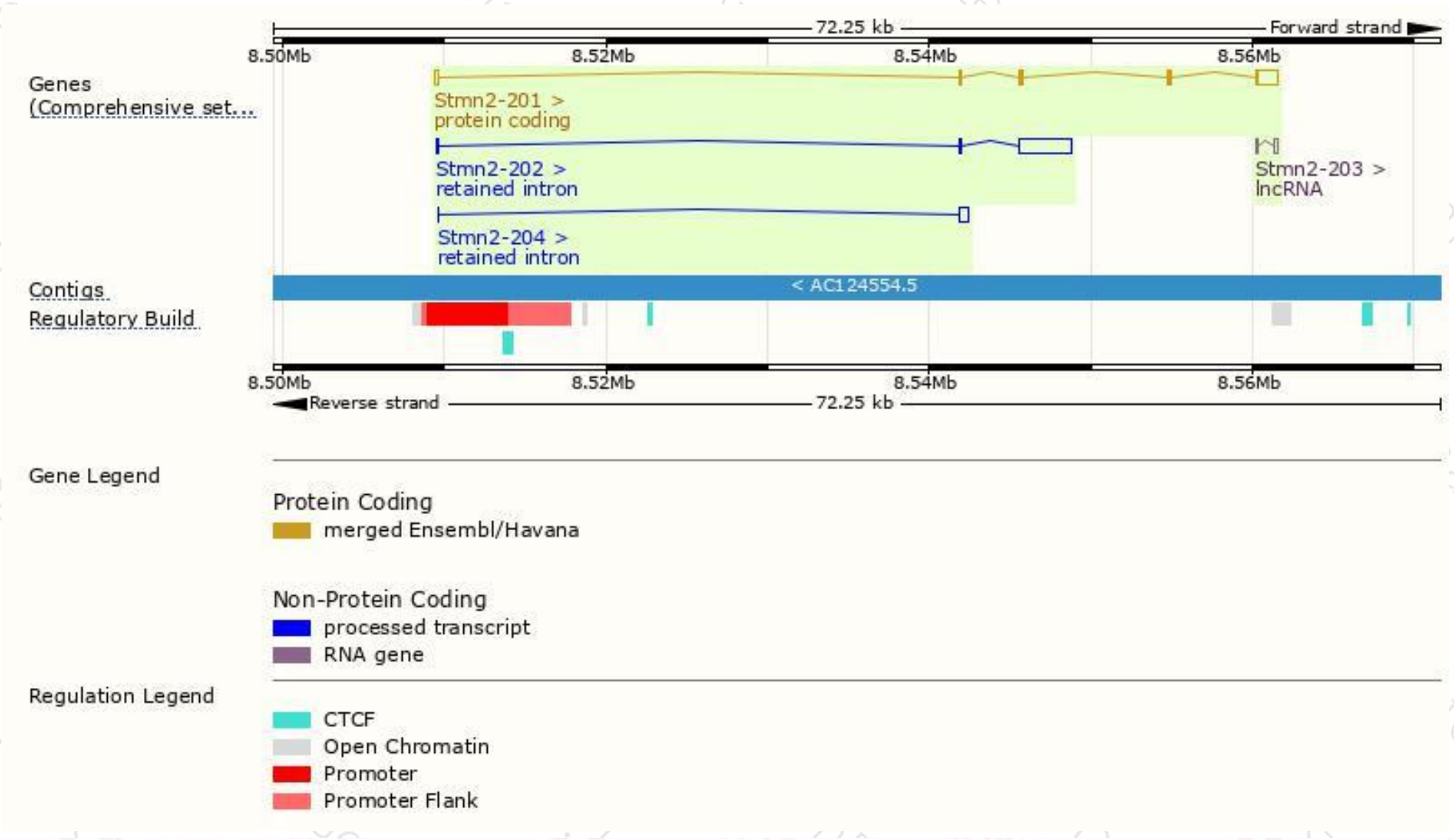
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Stmn2-201	ENSMUST00000029002.8	2073	179aa	Protein coding	CCDS17231	P55821 Q545S4	TSL:1 GENCODE basic APPRIS P1
Stmn2-202	ENSMUST00000191847.1	3413	No protein	Retained intron	-	-	TSL:1
Stmn2-204	ENSMUST00000194905.1	642	No protein	Retained intron	-	-	TSL:2
Stmn2-203	ENSMUST00000194307.1	308	No protein	lncRNA	-	-	TSL:3

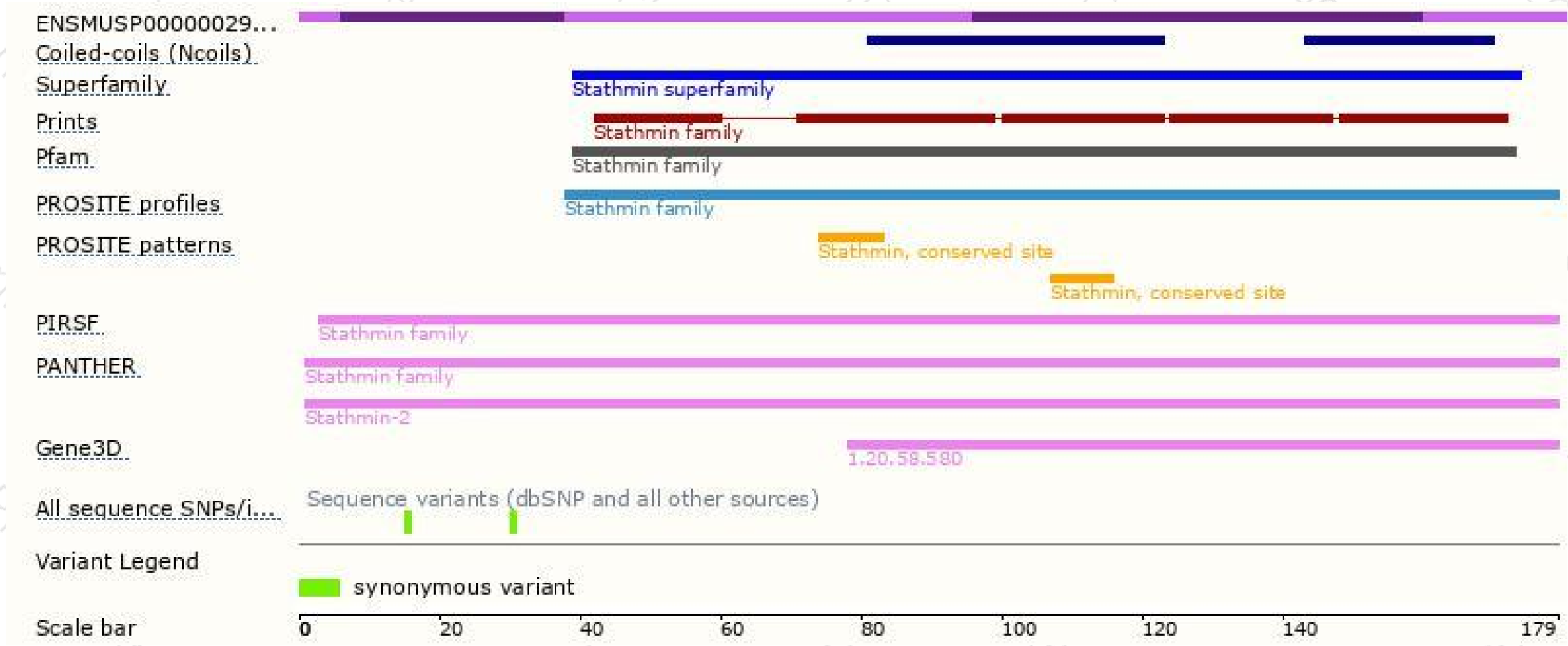
The strategy is based on the design of *Stmn2-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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