

S100b Cas9-KO Strategy

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Design Date:

2019/10/24

Project Overview

Project Name

S100b

Project type

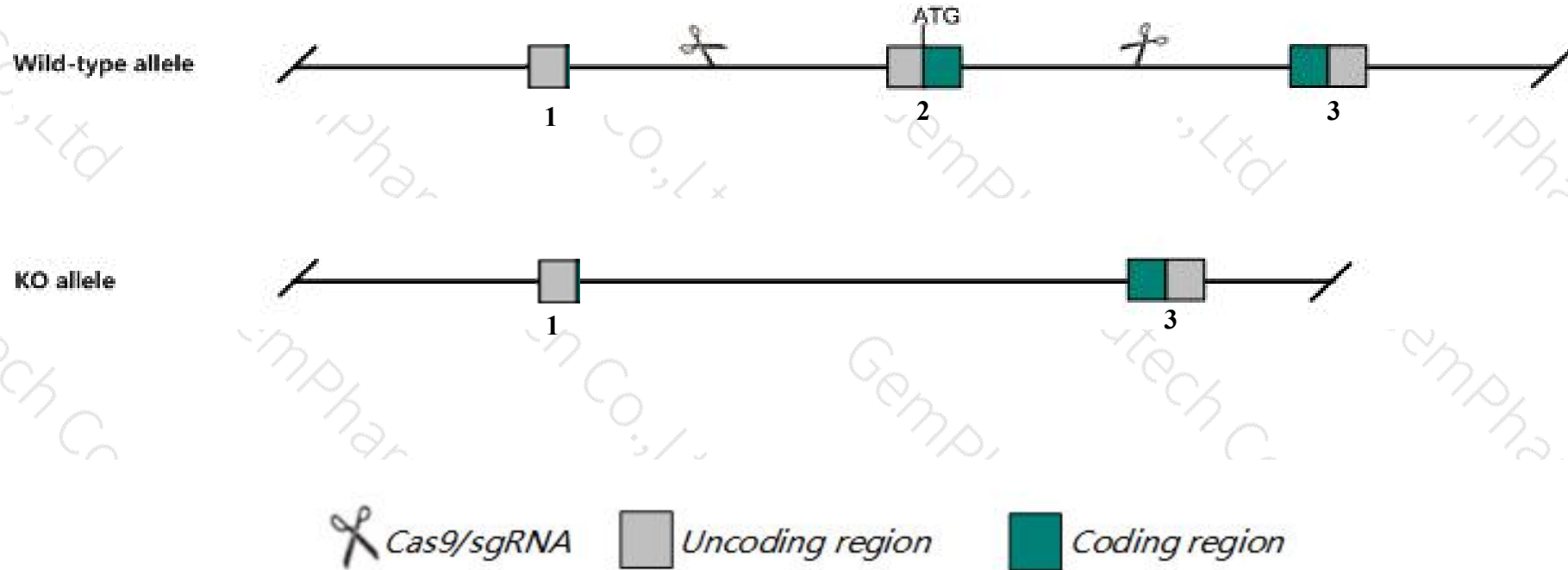
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *S100b* gene. The schematic diagram is as follows:



- The *S100b* gene has 1 transcript. According to the structure of *S100b* gene, exon2 of *S100b-201* (ENSMUST00000036387.7) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *S100b* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Homozygotes for targeted null mutations exhibit enhanced spatial memory, fear memory, and long-term potentiation in the hippocampal CA1 region, and more rapid and severe seizures as the result of an amygdala kindling paradigm.
- The *S100b* 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)

S100b S100 protein, beta polypeptide, neural [*Mus musculus* (house mouse)]

Gene ID: 20203, updated on 22-Oct-2019

Summary

Official Symbol S100b provided by [MGI](#)

Official Full Name S100 protein, beta polypeptide, neural provided by [MGI](#)

Primary source [MGI:MGI:98217](#)

See related [Ensembl:ENSMUSG00000033208](#)

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 Bpb; A1850290

Expression Biased expression in cerebellum adult (RPKM 164.7), frontal lobe adult (RPKM 54.2) and 1 other tissue [See more](#)

Orthologs [human](#) [all](#)

Transcript information (Ensembl)

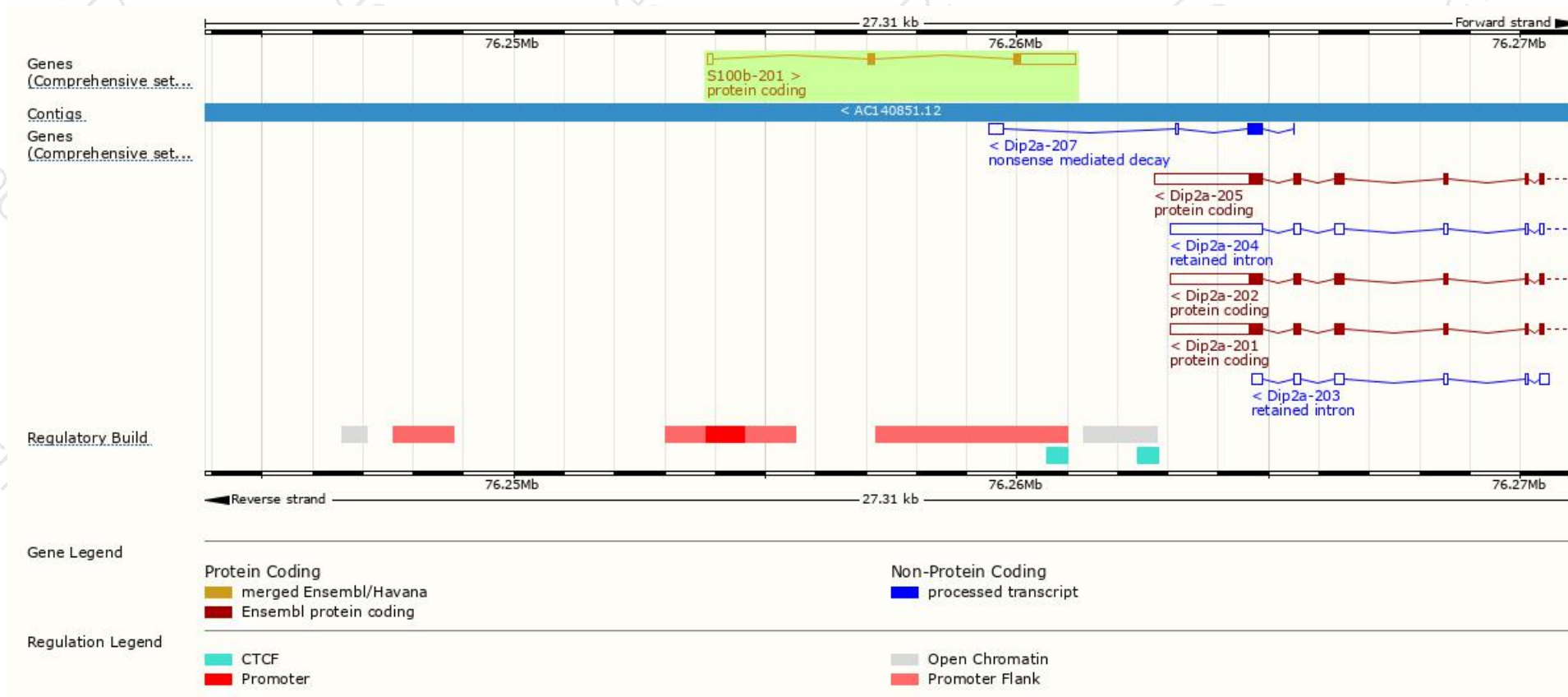
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
S100b-201	ENSMUST00000036387.7	1484	92aa	Protein coding	CCDS35943	P50114 Q3UY00	TSL:1 Gencode basic APPRIS P1

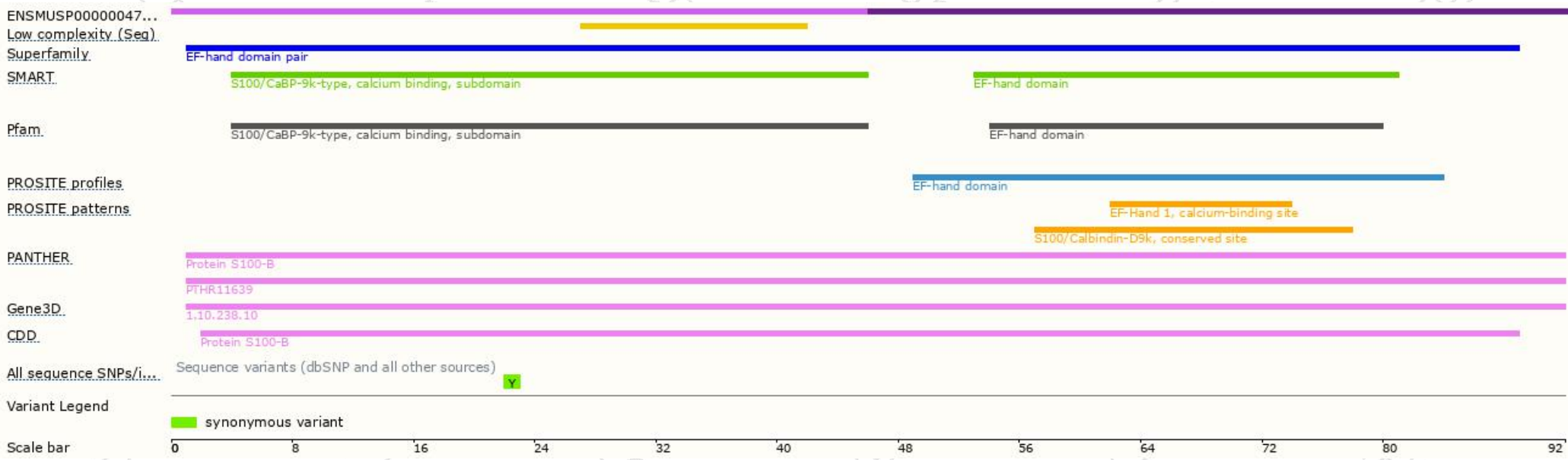
The strategy is based on the design of *S100b-201* transcript, The transcription is shown below



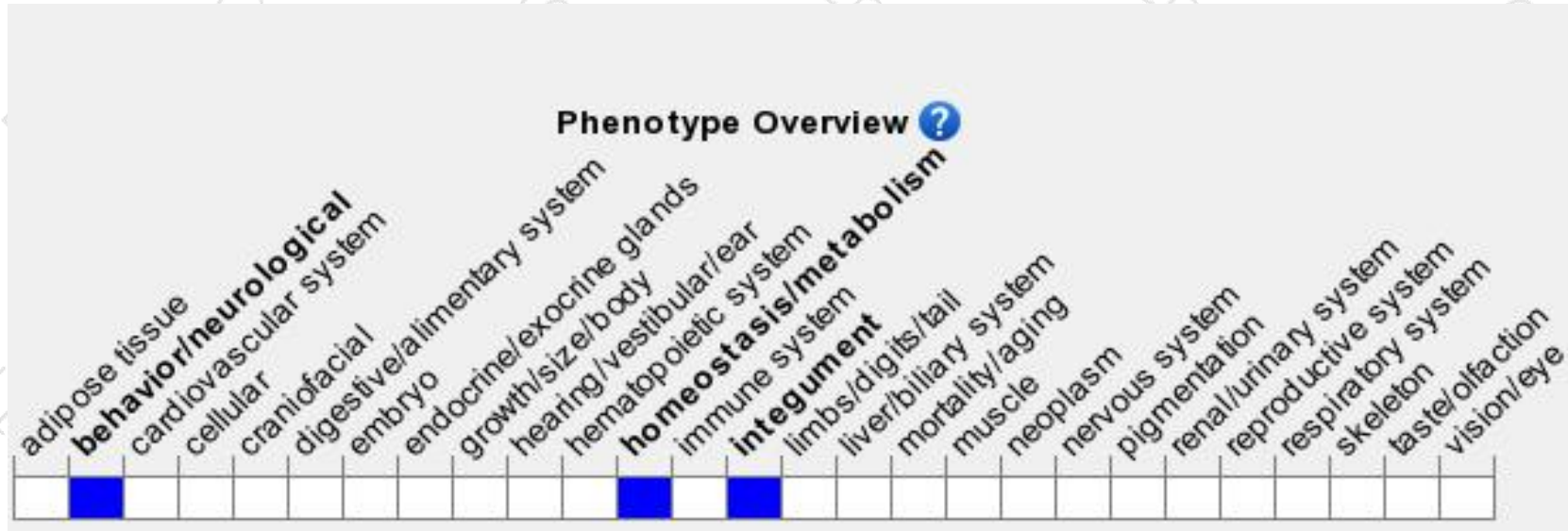
Genomic location distribution



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, Homozygotes for targeted null mutations exhibit enhanced spatial memory, fear memory, and long-term potentiation in the hippocampal CA1 region, and more rapid and severe seizures as the result of an amygdala kindling paradigm.

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

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