

Asic1 Cas9-KO Strategy

Designer:Lixin Lv

Project Overview

Project Name

Asic1

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Asic1* gene. The schematic diagram is as follows:



- The *Asic1* gene has 6 transcripts. According to the structure of *Asic1* gene, exon2-exon5 of *Asic1-201* (ENSMUST00000023758.8) 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 *Asic1* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Homozygous mutation of this gene results in absence of H
- The *Asic1* gene is located on the Chr15. 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)

Asic1 acid-sensing (proton-gated) ion channel 1 [Mus musculus (house mouse)]

Gene ID: 11419, updated on 5-Mar-2019

Summary



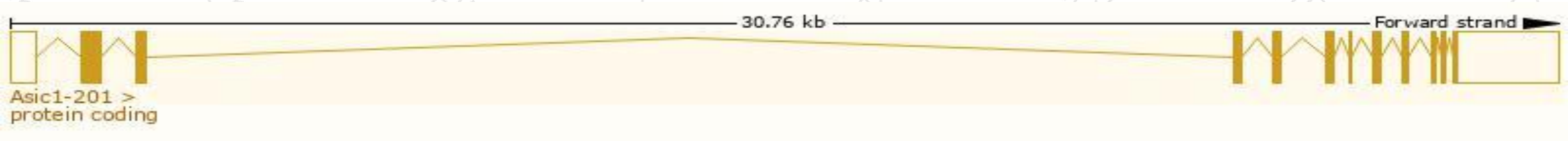
Official Symbol	Asic1 provided by MGI
Official Full Name	acid-sensing (proton-gated) ion channel 1 provided by MGI
Primary source	MGI:MGI:1194915
See related	Ensembl:ENSMUSG00000023017
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AI843610, ASIC, ASIC1a, Accn2, B530003N02Rik, BNaC2
Expression	Biased expression in whole brain E14.5 (RPKM 11.2), CNS E18 (RPKM 10.4) and 7 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

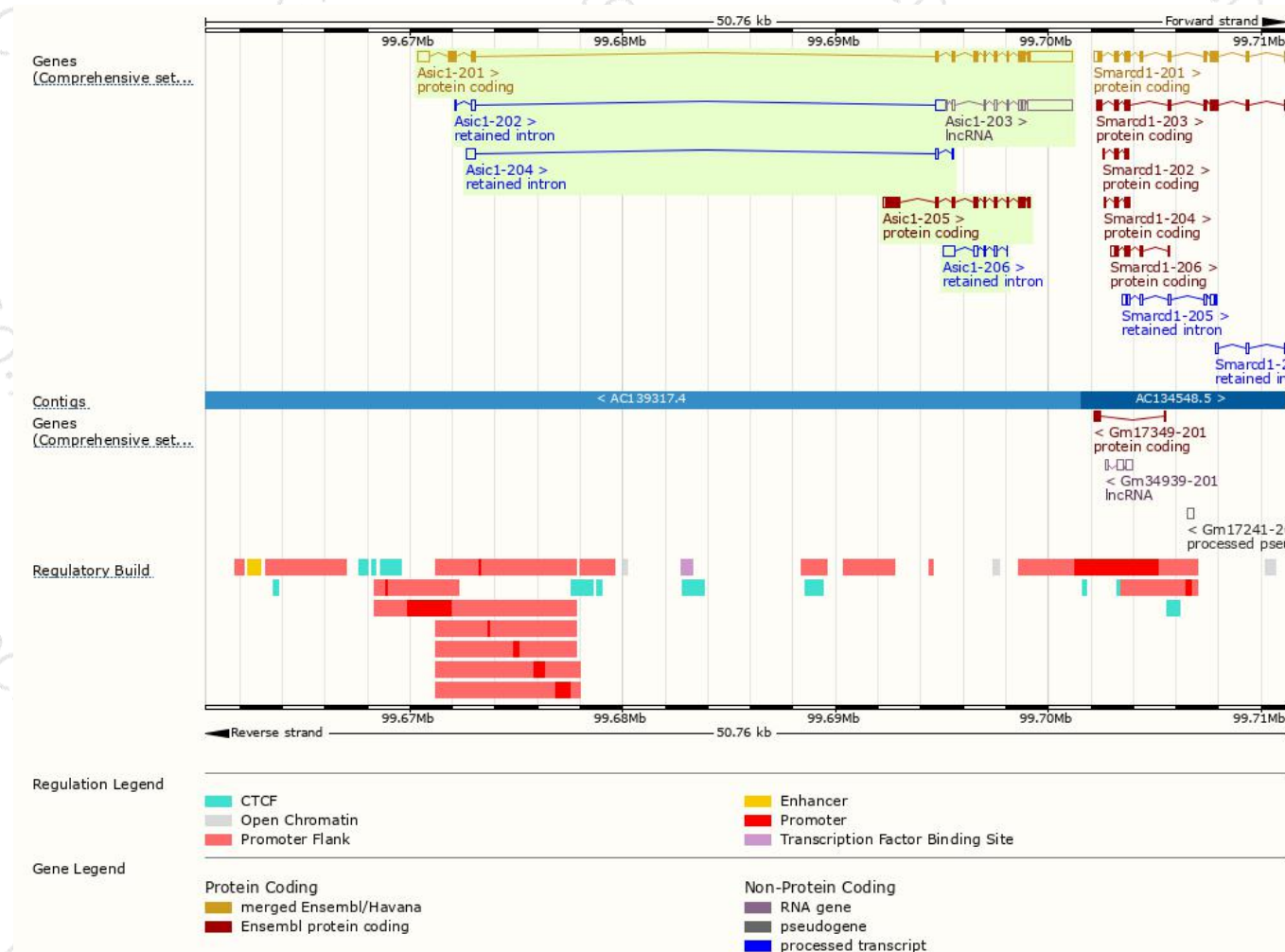
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Asic1-201	ENSMUST00000023758.8	4114	526aa	Protein coding	CCDS27826	Q6N XK8	TSL:1 GENCODE basic APPRIS P1
Asic1-205	ENSMUST000000228185.1	1818	559aa	Protein coding	-	Q6N XK8	GENCODE basic
Asic1-203	ENSMUST000000227670.1	2788	No protein	Processed transcript	-	-	
Asic1-206	ENSMUST000000228610.1	929	No protein	Retained intron	-	-	
Asic1-202	ENSMUST000000226291.1	715	No protein	Retained intron	-	-	
Asic1-204	ENSMUST000000228012.1	638	No protein	Retained intron	-	-	

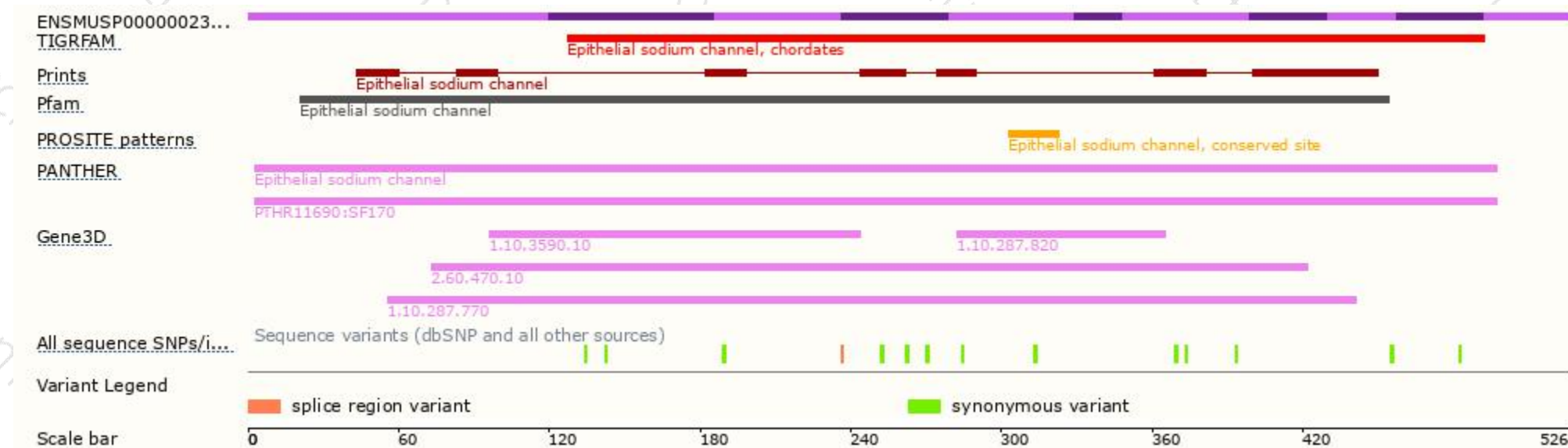
The strategy is based on the design of *Asic1-201* transcript,The transcription is shown below



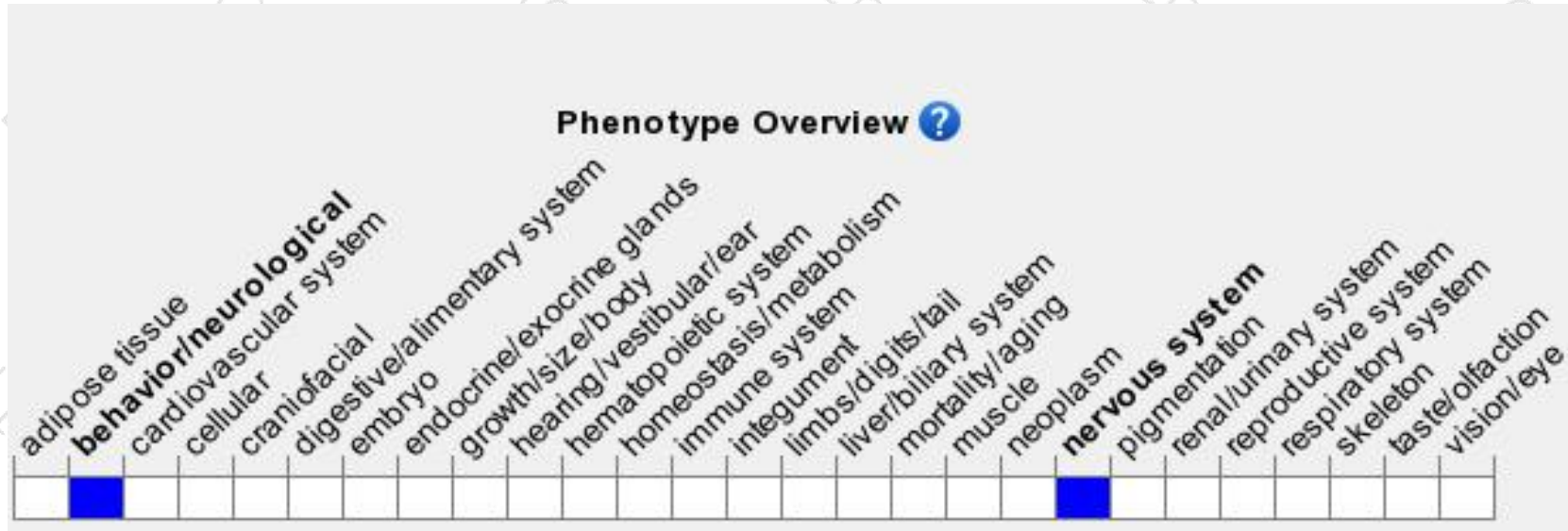
Genomic location distribution



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, Homozygous mutation of this gene results in absence of H

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

Tel: 400-9660890

