

Capn8 Cas9-KO Strategy

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Project Overview

Project Name

Capn8

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Capn8* gene. The schematic diagram is as follows:



- The *Capn8* gene has 4 transcripts. According to the structure of *Capn8* gene, exon2 of *Capn8-202* (ENSMUST00000168514.6) transcript is recommended as the knockout region. The region contains 70bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Capn8* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a knock-out allele or allele that produces a proteolytically inactive protein exhibit increased sensitivity to ethanol-induced gastric mucosa injury.
- The *Capn8* gene is located on the Chr1. 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)

Capn8 calpain 8 [Mus musculus (house mouse)]

Gene ID: 170725, updated on 31-Jan-2019

Summary



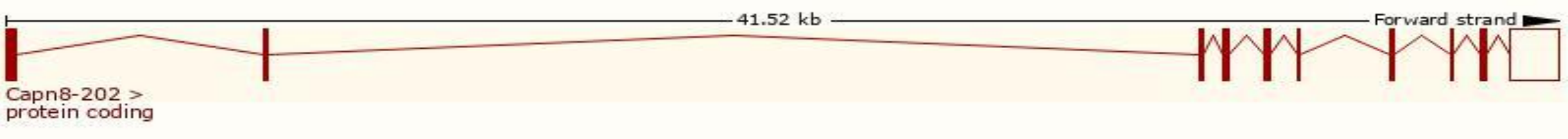
Official Symbol	Capn8 provided by MGI
Official Full Name	calpain 8 provided by MGI
Primary source	MGI:MGI:2181366
See related	Ensembl:ENSMUSG00000038599
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	nCL-2, nCL-2'
Expression	Biased expression in stomach adult (RPKM 4.6), colon adult (RPKM 1.6) and 6 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

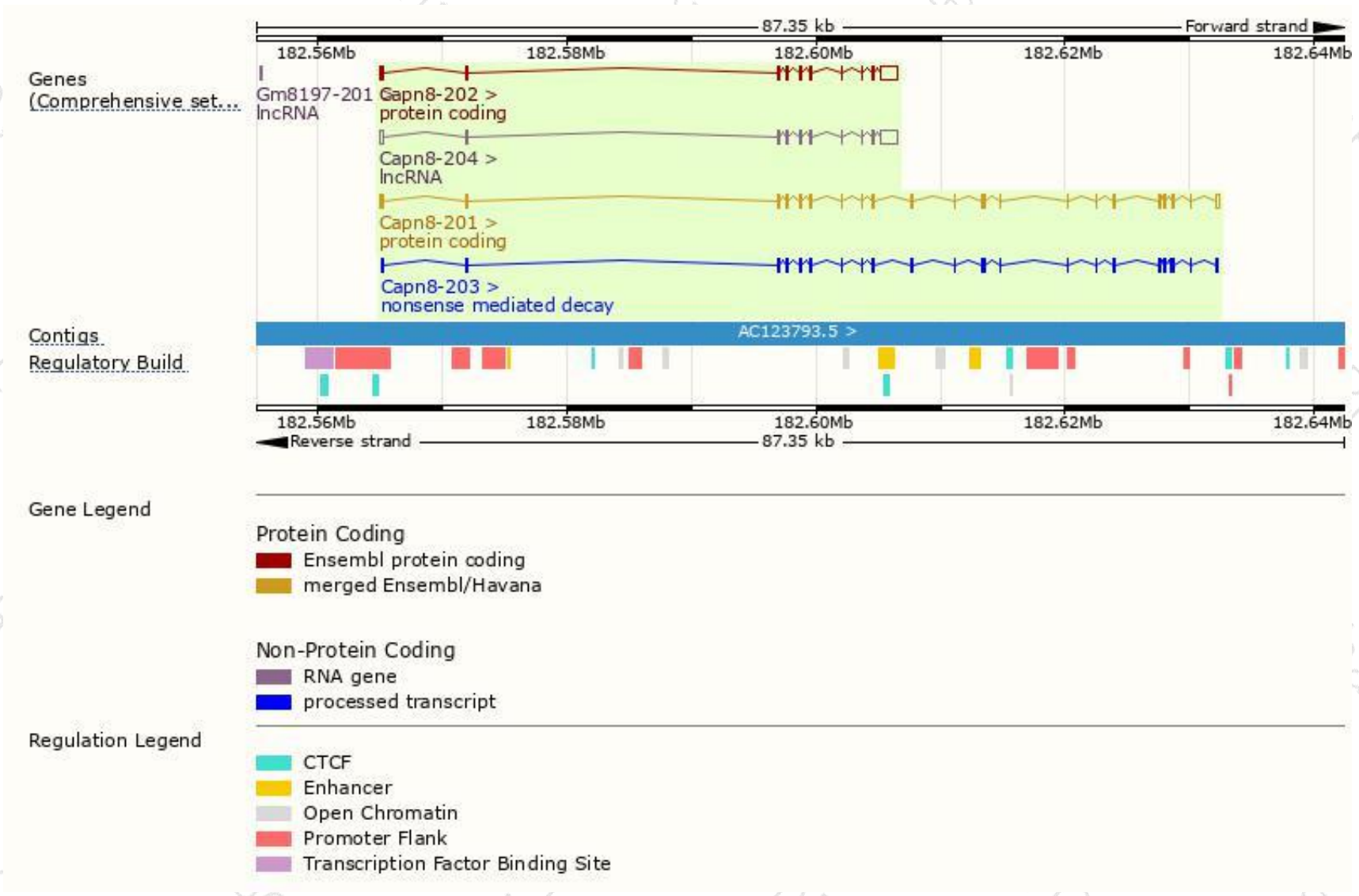
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Capn8-202	ENSMUST00000168514.6	2483	381aa	Protein coding	CCDS48477	Q91VA3	TSL:1 GENCODE basic
Capn8-201	ENSMUST00000048941.13	2406	703aa	Protein coding	CCDS35814	A0A0R4J0K6	TSL:1 GENCODE basic APPRIS P1
Capn8-203	ENSMUST00000192671.1	2333	690aa	Nonsense mediated decay	-	A0A0A6YVU9	TSL:1
Capn8-204	ENSMUST00000193260.1	2483	No protein	lncRNA	-	-	TSL:1

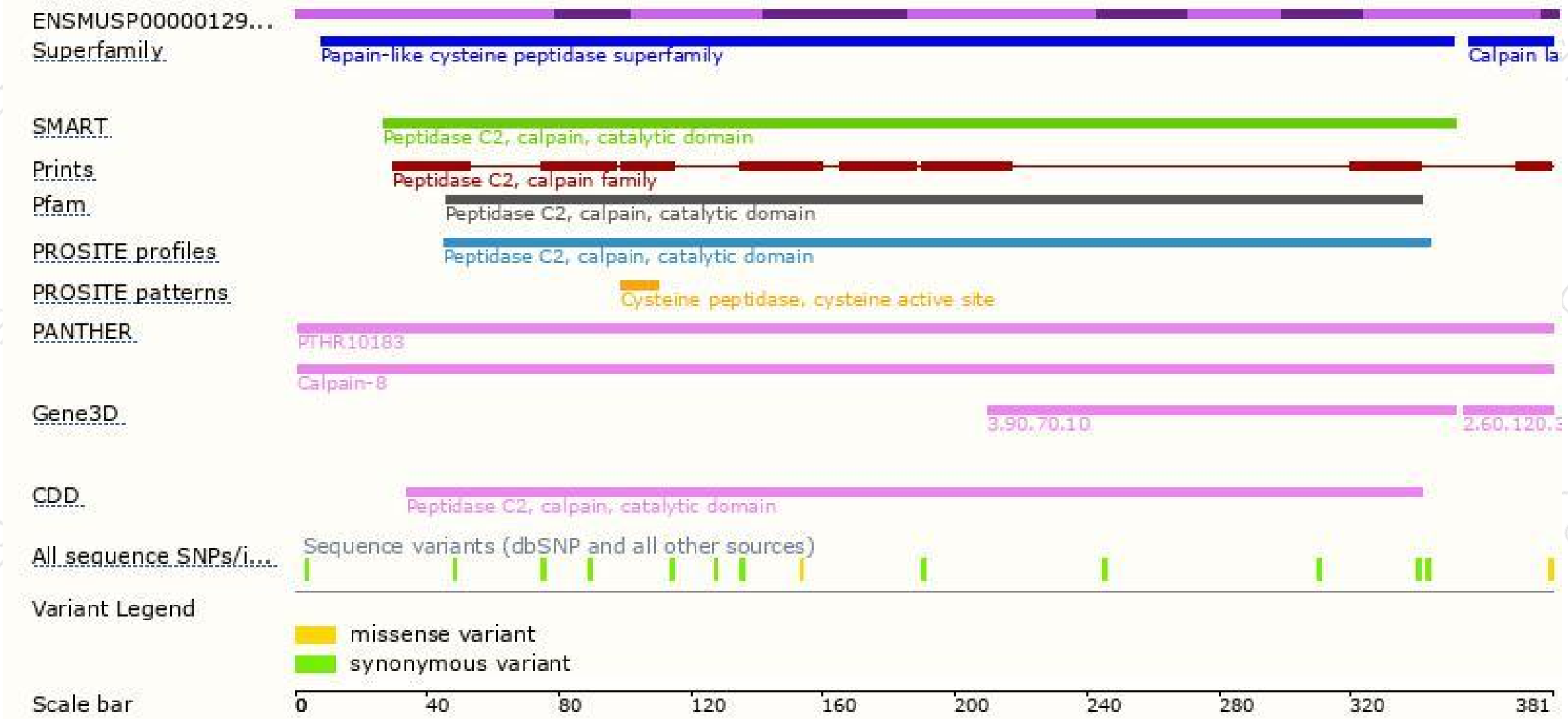
The strategy is based on the design of *Capn8-202* transcript,The transcription is shown below



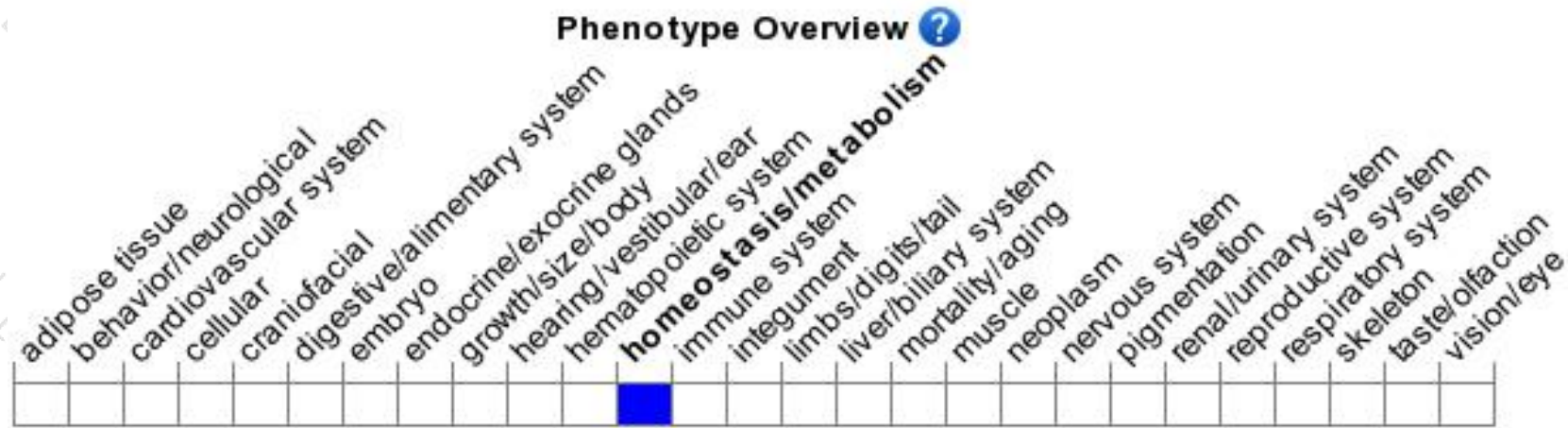
Genomic location distribution



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/>).

According to the existing MGI data, Mice homozygous for a knock-out allele or allele that produces a proteolytically inactive protein exhibit increased sensitivity to ethanol-induced gastric mucosa injury.

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

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