

Cnnm2 Cas9-KO Strategy

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Project Overview

Project Name

Cnnm2

Project type

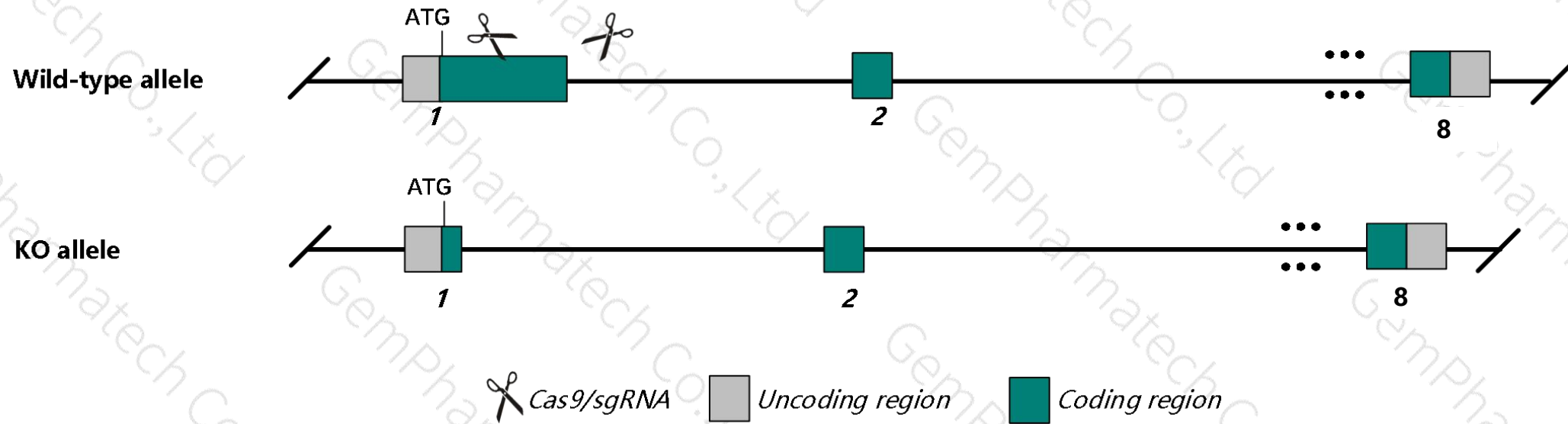
Cas9-KO

Strain background

C57BL/6J

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cnnm2* gene. The schematic diagram is as follows:



- The *Cnnm2* gene has 4 transcripts. According to the structure of *Cnnm2* gene, exon1 of *Cnnm2-202* (ENSMUST00000099373.11) transcript is recommended as the knockout region. The region contains part of exon1 and intron1. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Cnnm2* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6J mice. Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6J mice.

- The *Cnnm2* gene is located on the Chr19. 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)

Cnnm2 cyclin M2 [Mus musculus (house mouse)]

Gene ID: 94219, updated on 31-Jan-2019

Summary



Official Symbol	Cnnm2 provided by MGI
Official Full Name	cyclin M2 provided by MGI
Primary source	MGI:MGI:2151054
See related	Ensembl:ENSMUSG00000064105
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	AU015877, AW048635, Acdp2, Clp2
Expression	Ubiquitous expression in subcutaneous fat pad adult (RPKM 7.0), adrenal adult (RPKM 6.5) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

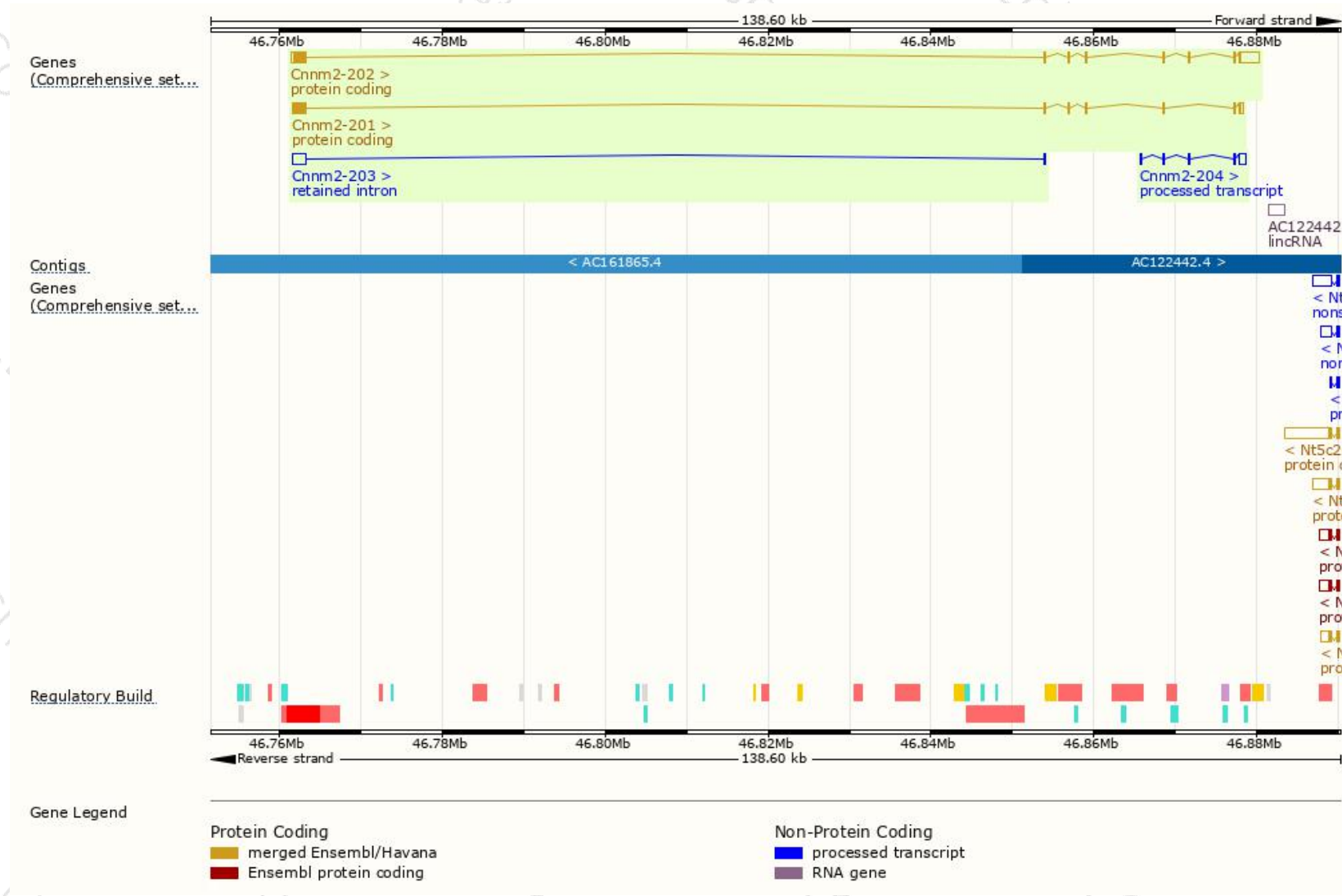
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cnnm2-202	ENSMUST00000099373.11	4955	875aa	Protein coding	CCDS50459	Q3TWN3	TSL:1 GENCODE basic APPRIS P4
Cnnm2-201	ENSMUST00000077666.5	3051	853aa	Protein coding	CCDS50460	Q3TWN3	TSL:1 GENCODE basic APPRIS ALT1
Cnnm2-204	ENSMUST00000235671.1	1296	No protein	Processed transcript	-	-	
Cnnm2-203	ENSMUST00000235378.1	1941	No protein	Retained intron	-	-	

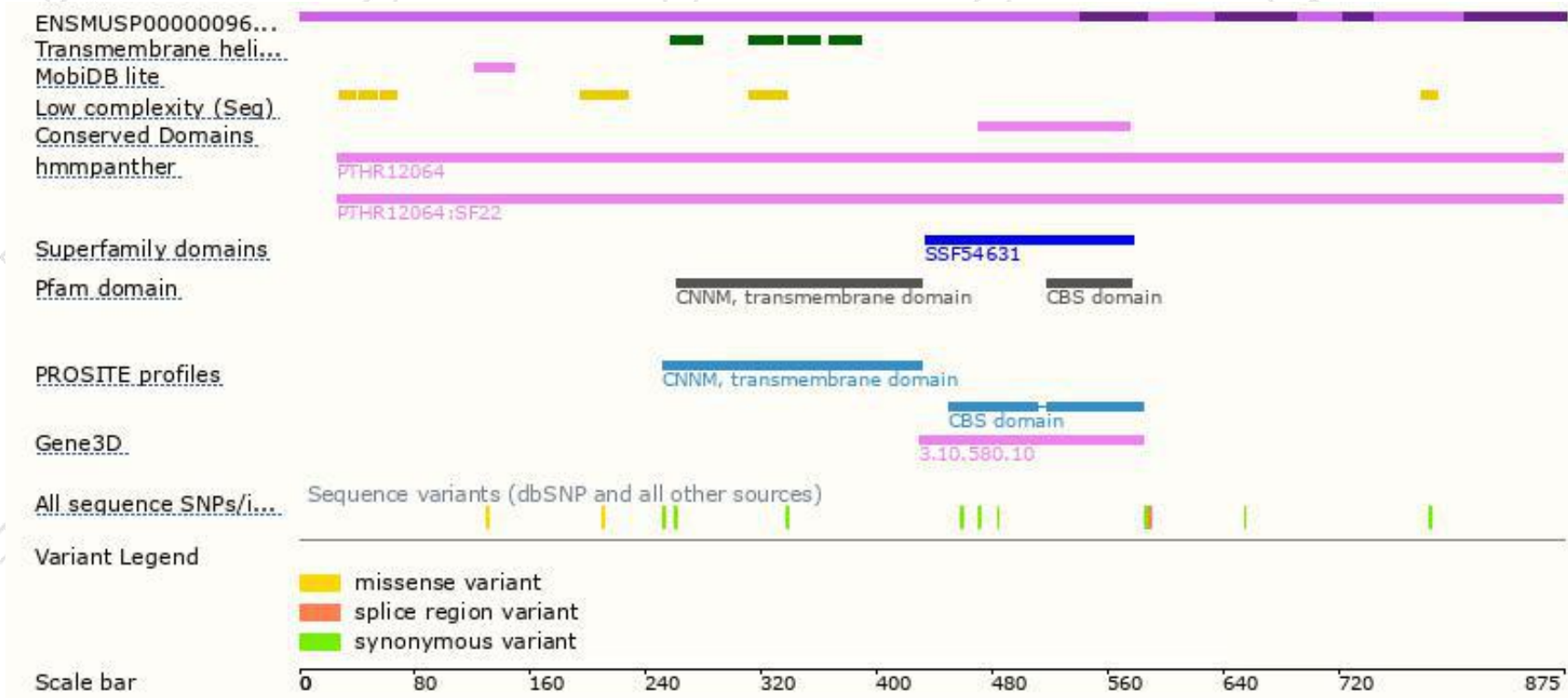
The strategy is based on the design of *Cnnm2-202* transcript,The transcription is shown below



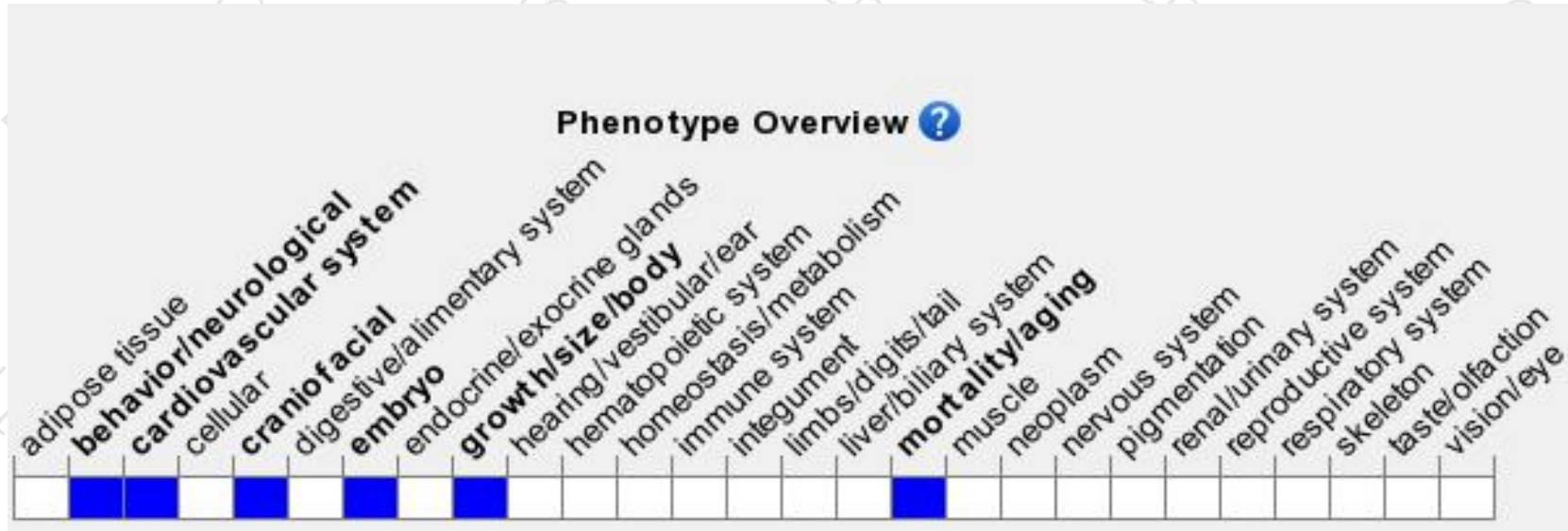
Genomic location distribution



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/>).

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

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