

Chmp4b Cas9-KO Strategy

Designer:

Daohua Xu

Design Date:

2019-8-5

Project Overview

Project Name

Chmp4b

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Chmp4b* gene. The schematic diagram is as follows:



- The *Chmp4b* gene has 3 transcripts. According to the structure of *Chmp4b* gene, exon2 of *Chmp4b-201* (ENSMUST00000044277.9) transcript is recommended as the knockout region. The region contains 178bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Chmp4b* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a gene trap insertion die between E7.5 and E8.5.
- The *Chmp4b* gene is located on the Chr2. 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)

Chmp4b charged multivesicular body protein 4B [Mus musculus (house mouse)]

Gene ID: 75608, updated on 31-Jan-2019

Summary



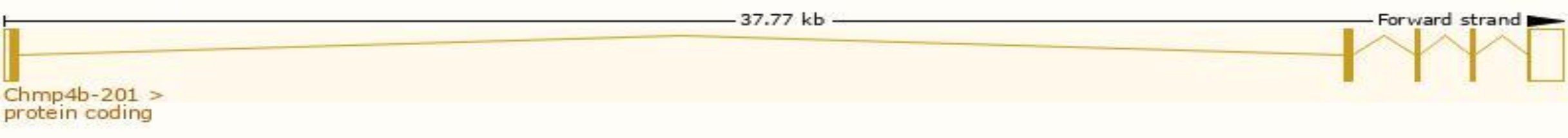
Official Symbol	Chmp4b provided by MGI
Official Full Name	charged multivesicular body protein 4B provided by MGI
Primary source	MGI:MGI:1922858
See related	Ensembl:ENSMUSG00000038467
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2010012F05Rik, C76846, Snf7-2
Expression	Ubiquitous expression in placenta adult (RPKM 92.6), bladder adult (RPKM 83.6) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

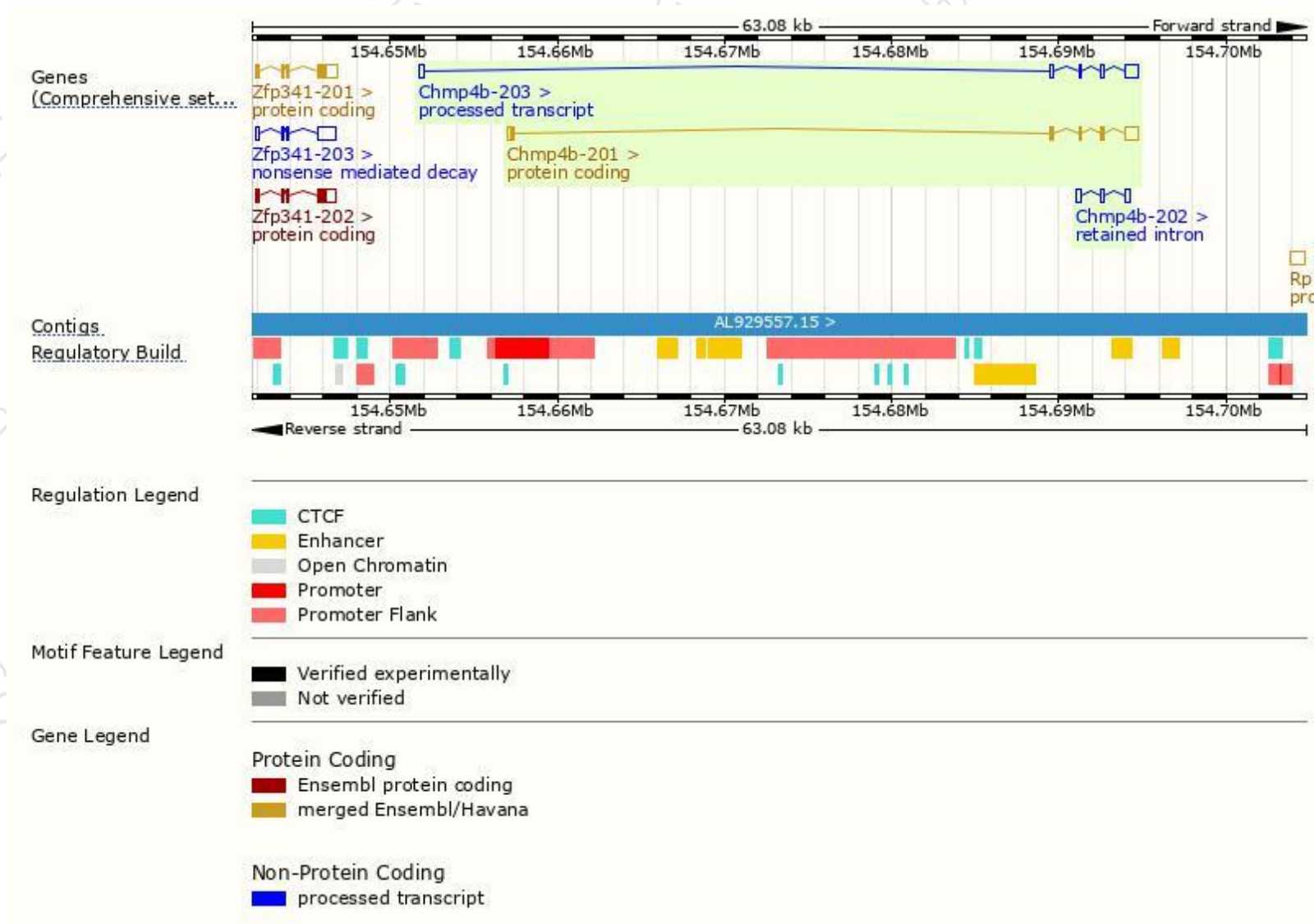
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Chmp4b-201	ENSMUST00000044277.9	1616	224aa	Protein coding	CCDS16938	Q9D8B3	TSL:1 GENCODE basic APPRIS P1
Chmp4b-202	ENSMUST00000136788.1	720	No protein	Retained intron	-	-	TSL:2
Chmp4b-203	ENSMUST00000151668.7	1528	No protein	lncRNA	-	-	TSL:1

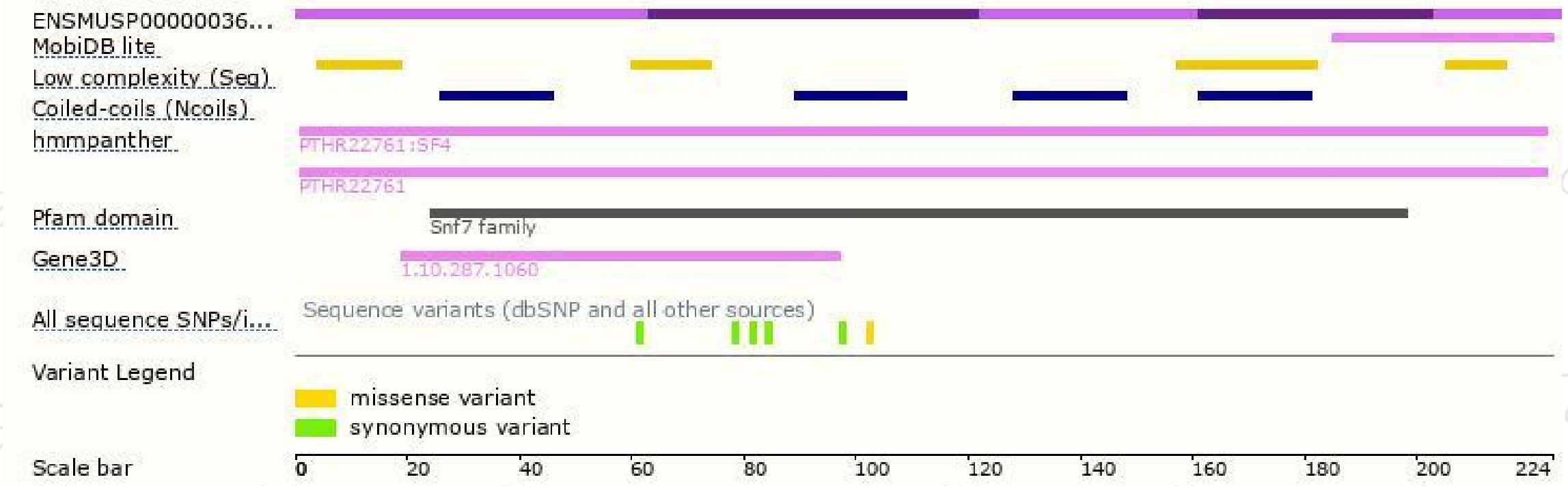
The strategy is based on the design of *Chmp4b-201* transcript,The transcription is shown below



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, Mice homozygous for a gene trap insertion die between E7.5 and E8.5.

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

Tel: 400-9660890

