

Cib3 Cas9-KO Strategy

Designer: Yanhua Shen

Project Overview

Project Name

Cib3

Project type

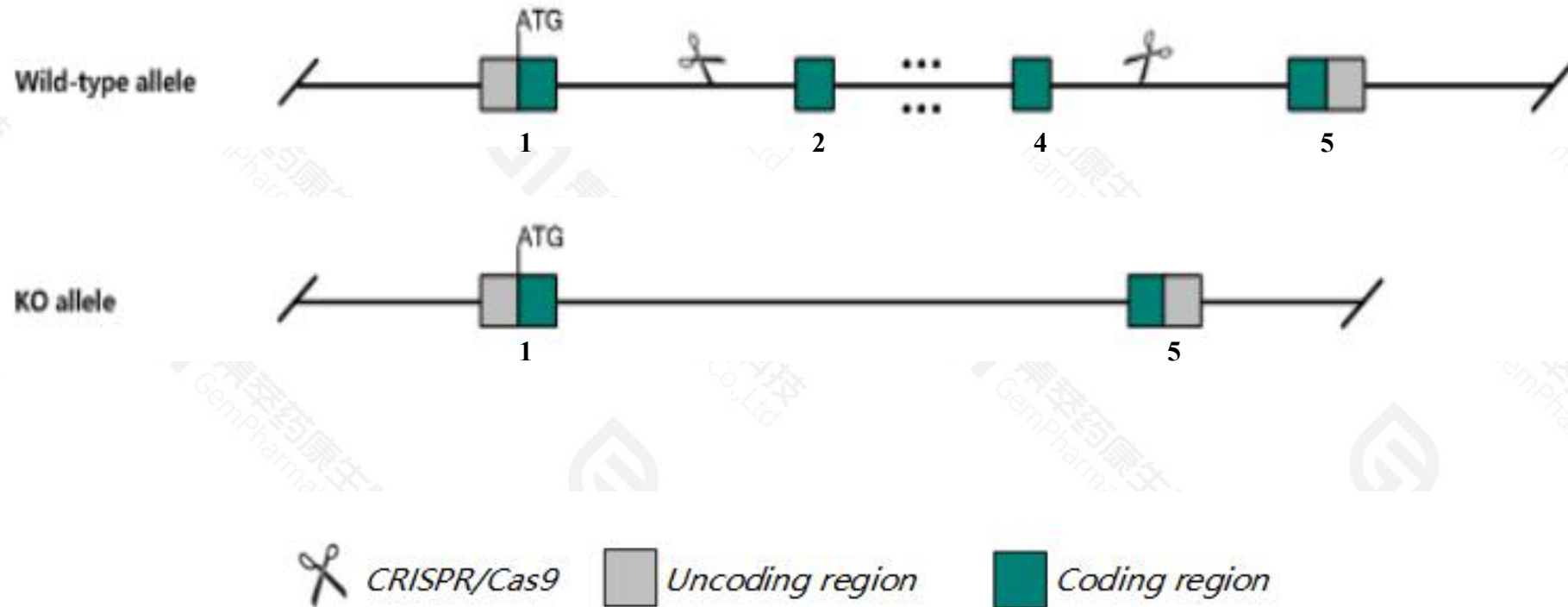
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cib3* gene. The schematic diagram is as follows:



- The *Cib3* gene has 3 transcripts. According to the structure of *Cib3* gene, exon2-exon4 of *Cib3*-201(ENSMUST00000098630.5) transcript is recommended as the knockout region. The region contains most of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Cib3* gene. The brief process is as follows: CRISPR/Cas9 system were microinjected into the fertilized eggs of C57BL/6JGpt 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/6JGpt mice.

- The KO region deletes most of the coding sequence, but does not result in frameshift.
- The *Cib3* gene is located on the Chr8. 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)

Cib3 calcium and integrin binding family member 3 [Mus musculus (house mouse)]

Gene ID: 234421, updated on 26-Sep-2020

Summary



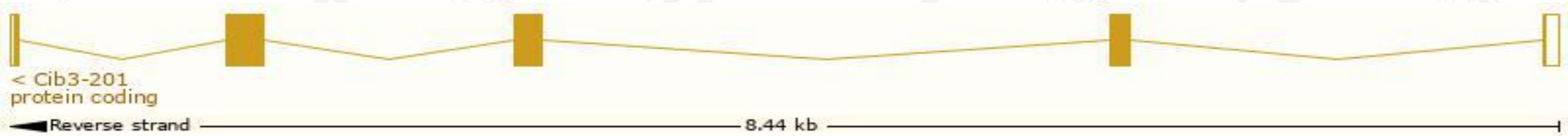
Official Symbol	Cib3 provided by MGI
Official Full Name	calcium and integrin binding family member 3 provided by MGI
Primary source	MGI:MGI:2685953
See related	Ensembl:ENSMUSG00000074240
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	C730014M21Rik, Gm1107, KI, KIP3
Expression	Low expression observed in reference dataset See more
Orthologs	human all

Transcript information (Ensembl)

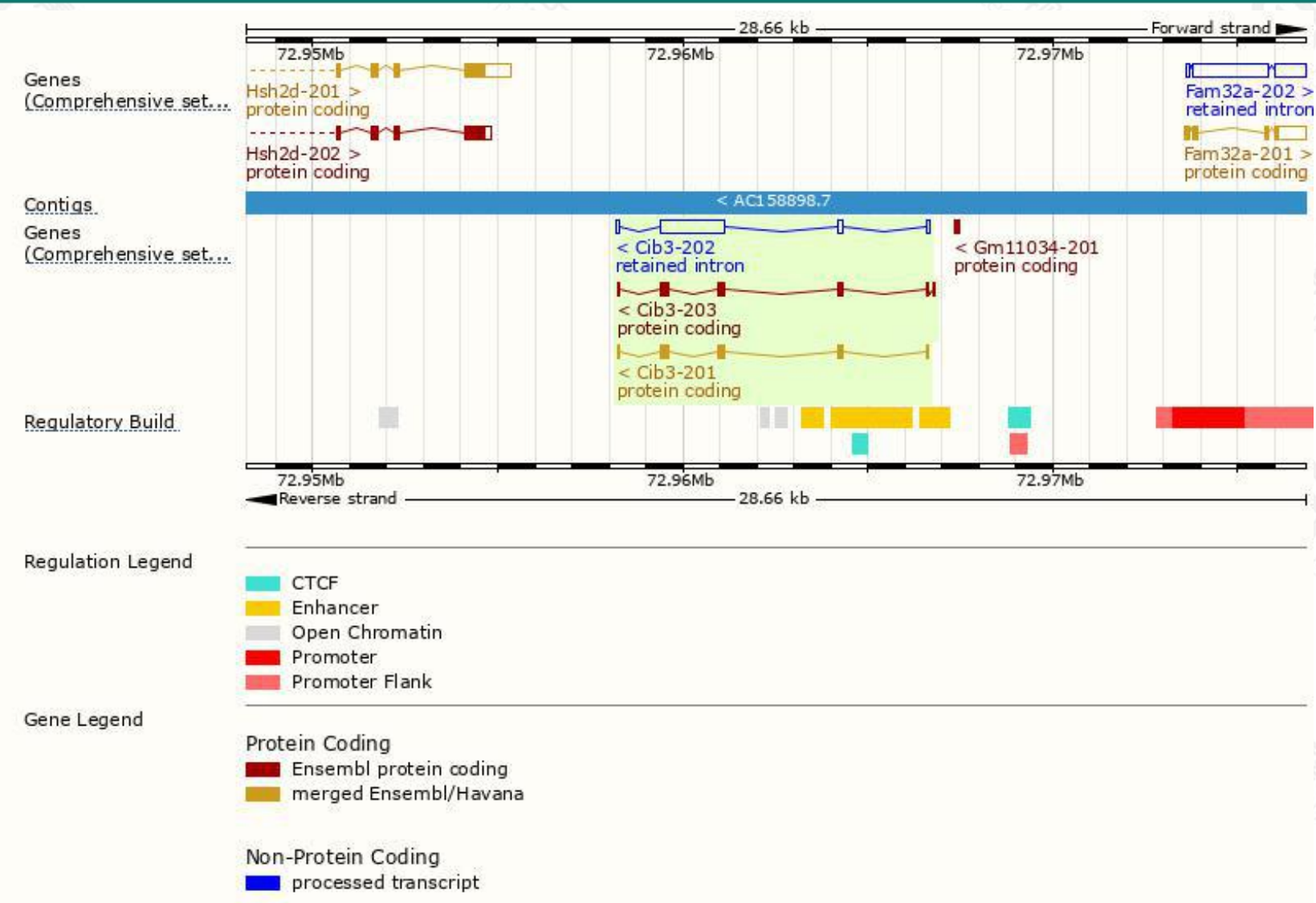
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cib3-201	ENSMUST00000098630.5	585	160aa	Protein coding	CCDS52594		TSL:1 , GENCODE basic ,
Cib3-203	ENSMUST00000238973.2	617	187aa	Protein coding	-		GENCODE basic , APPRIS P1 ,
Cib3-202	ENSMUST00000211946.2	2014	No protein	Retained intron	-		TSL:1 ,

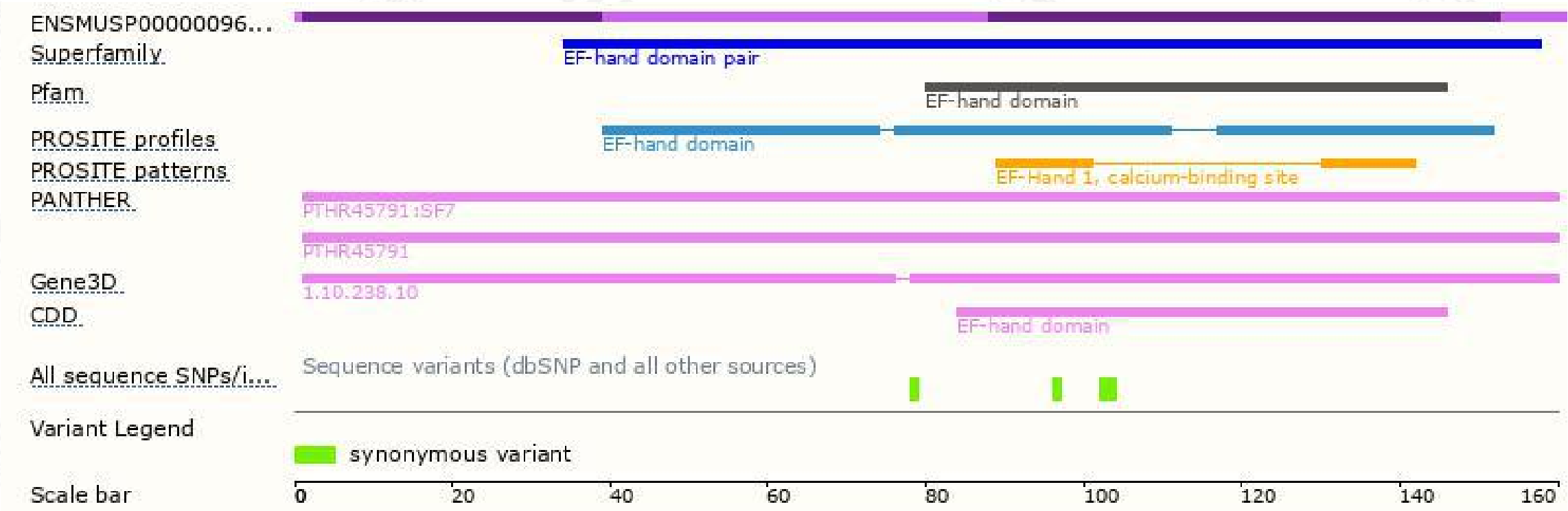
The strategy is based on the design of *Cib3-201* transcript,the transcription is shown below:



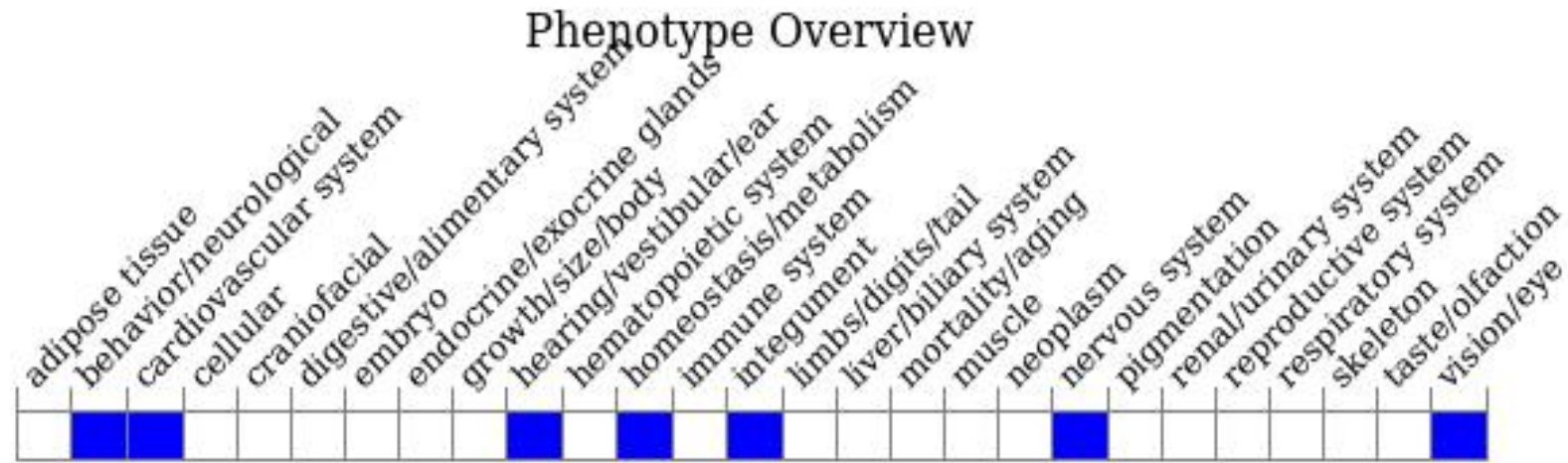
Genomic location distribution



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/>).

If you have any questions, you are welcome to inquire.
Tel: 400-9660890

