

Cep192 Cas9-KO Strategy

Designer:

Reviewer:

Design Date:

Project Overview

Project Name

Cep192

Project type

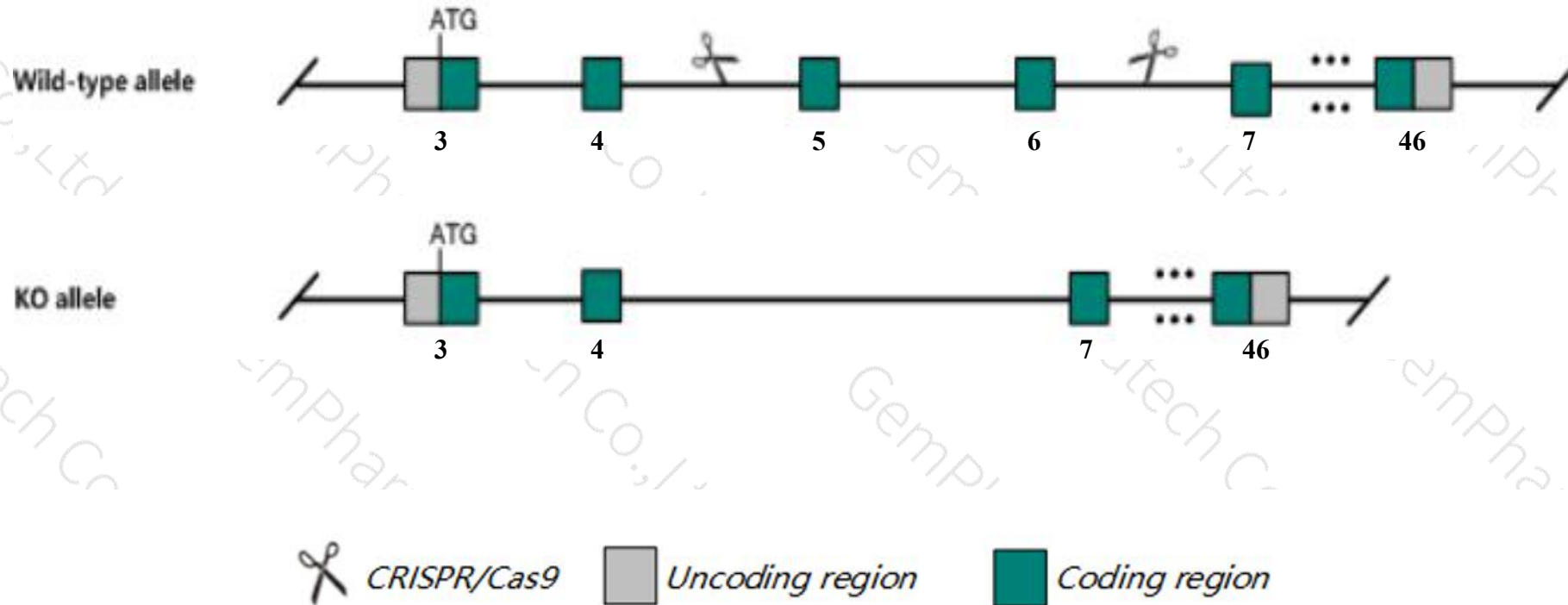
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cep192* gene. The schematic diagram is as follows:



- The *Cep192* gene has 12 transcripts. According to the structure of *Cep192* gene, exon5-exon6 of *Cep192*-201(ENSMUST00000025425.6) transcript is recommended as the knockout region. The region contains 202bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Cep192* 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 *Cep192* gene is located on the Chr18. 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)

Cep192 centrosomal protein 192 [Mus musculus (house mouse)]

Gene ID: 70799, updated on 13-Mar-2020

Summary



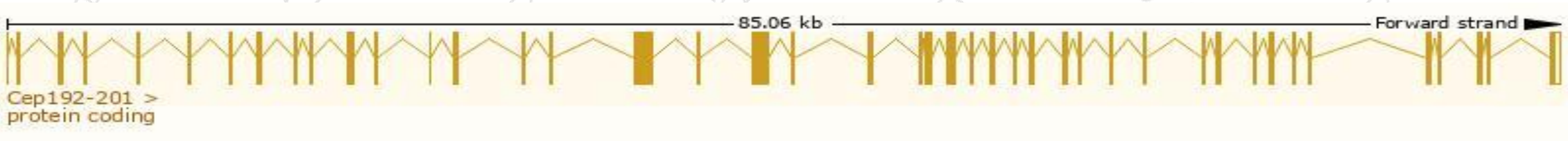
Official Symbol	Cep192 provided by MGI
Official Full Name	centrosomal protein 192 provided by MGI
Primary source	MGI:MGI:1918049
See related	Ensembl:ENSMUSG00000024542
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4631422C13Rik, D430014P18Rik
Expression	Ubiquitous expression in CNS E11.5 (RPKM 7.7), limb E14.5 (RPKM 5.8) and 25 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

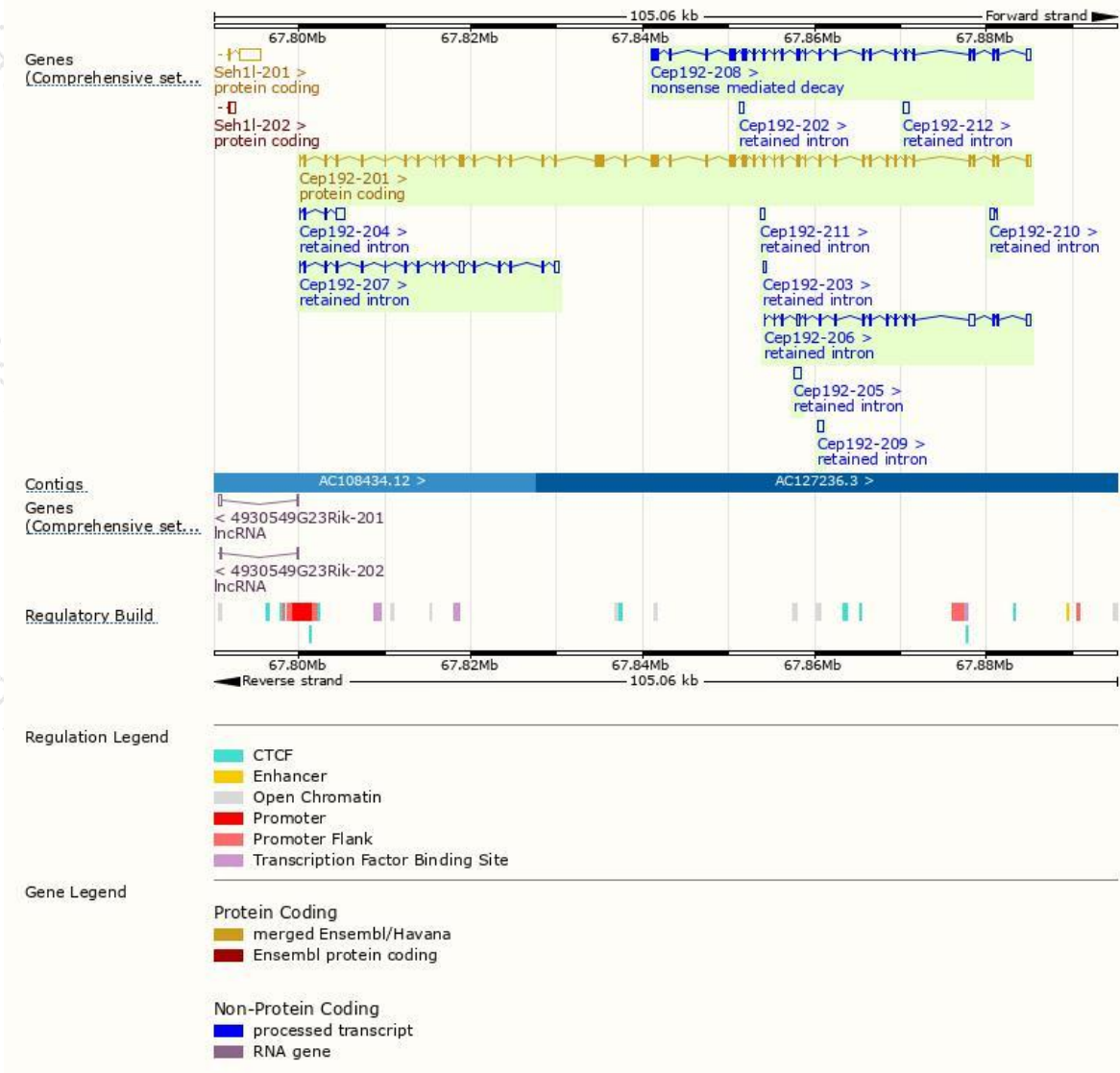
The gene has 12 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cep192-201	ENSMUST00000025425.6	8093	2514aa	Protein coding	CCDS50313	E9Q4Y4	TSL:5 GENCODE basic APPRIS P1
Cep192-208	ENSMUST00000225303.1	4548	1105aa	Nonsense mediated decay	-	A0A286YDK4	CDS 5' incomplete
Cep192-206	ENSMUST00000224921.1	3113	No protein	Retained intron	-	-	
Cep192-207	ENSMUST00000225077.1	2607	No protein	Retained intron	-	-	
Cep192-204	ENSMUST00000224387.1	1425	No protein	Retained intron	-	-	
Cep192-205	ENSMUST00000224817.1	680	No protein	Retained intron	-	-	
Cep192-209	ENSMUST00000225580.1	646	No protein	Retained intron	-	-	
Cep192-212	ENSMUST00000225681.1	600	No protein	Retained intron	-	-	
Cep192-210	ENSMUST00000225589.1	524	No protein	Retained intron	-	-	
Cep192-211	ENSMUST00000225677.1	497	No protein	Retained intron	-	-	
Cep192-202	ENSMUST00000223571.1	456	No protein	Retained intron	-	-	
Cep192-203	ENSMUST00000223715.1	323	No protein	Retained intron	-	-	

The strategy is based on the design of *Cep192-201* transcript,the transcription is shown below:



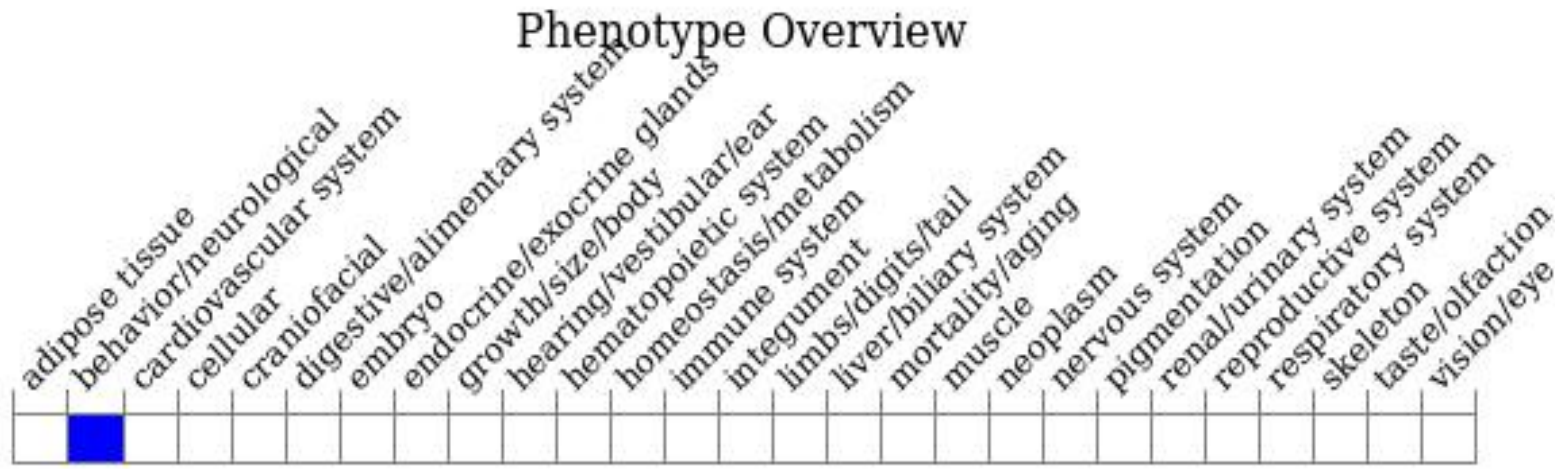
Genomic location distribution



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.

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