

Cass4 Cas9-KO Strategy

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Design Date: 2020-5-28

Project Overview

Project Name

Cass4

Project type

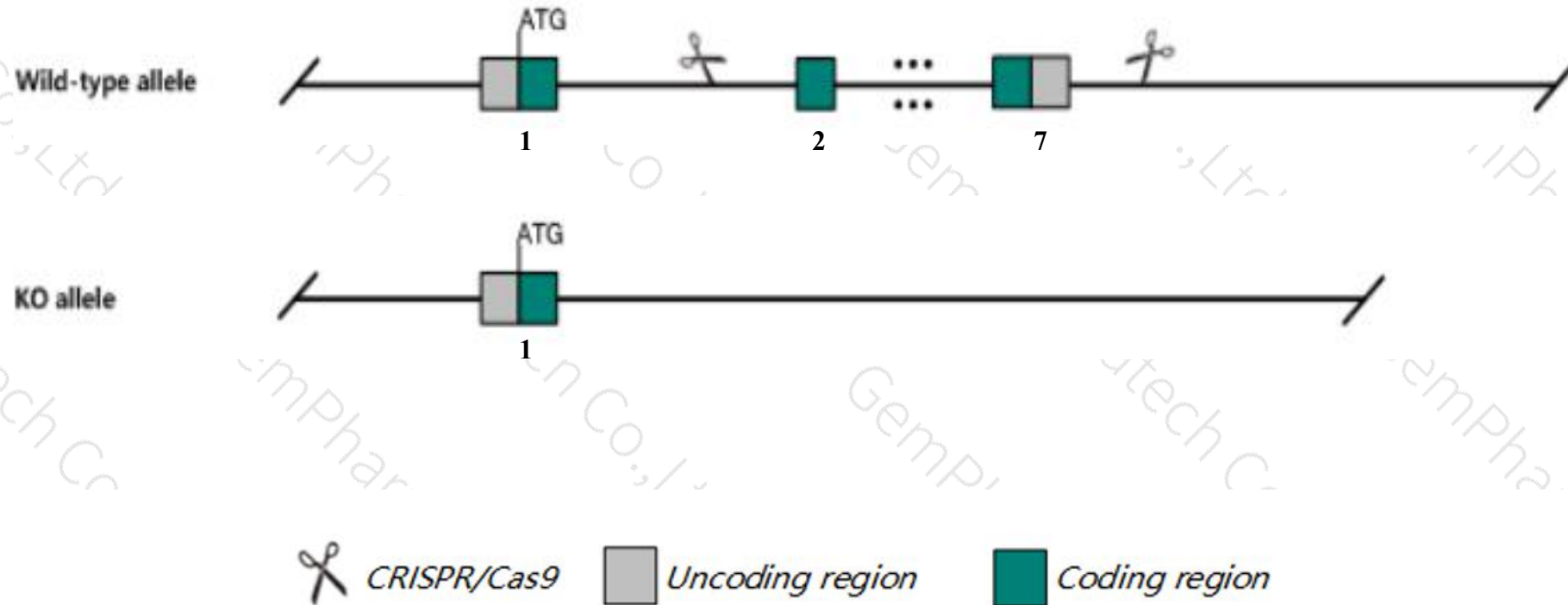
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cass4* gene. The schematic diagram is as follows:



- The *Cass4* gene has 4 transcripts. According to the structure of *Cass4* gene, exon2-exon7 of *Cass4-203* (ENSMUST00000109136.2) 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 *Cass4* gene. The brief process is as follows: CRISPR/Cas9 system

- The KO region contains functional region of the *Gm14455* gene. Knockout the region may affect the function of *Gm14455* gene.
- The *Cass4* 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)

Cass4 Cas scaffolding protein family member 4 [Mus musculus (house mouse)]

Gene ID: 320664, updated on 13-Mar-2020

Summary



Official Symbol	Cass4 provided by MGI
Official Full Name	Cas scaffolding protein family member 4 provided by MGI
Primary source	MGI:MGI:2444482
See related	Ensembl:ENSMUSG00000074570
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	F730031O20Rik
Expression	Broad expression in lung adult (RPKM 2.2), thymus adult (RPKM 1.6) and 20 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

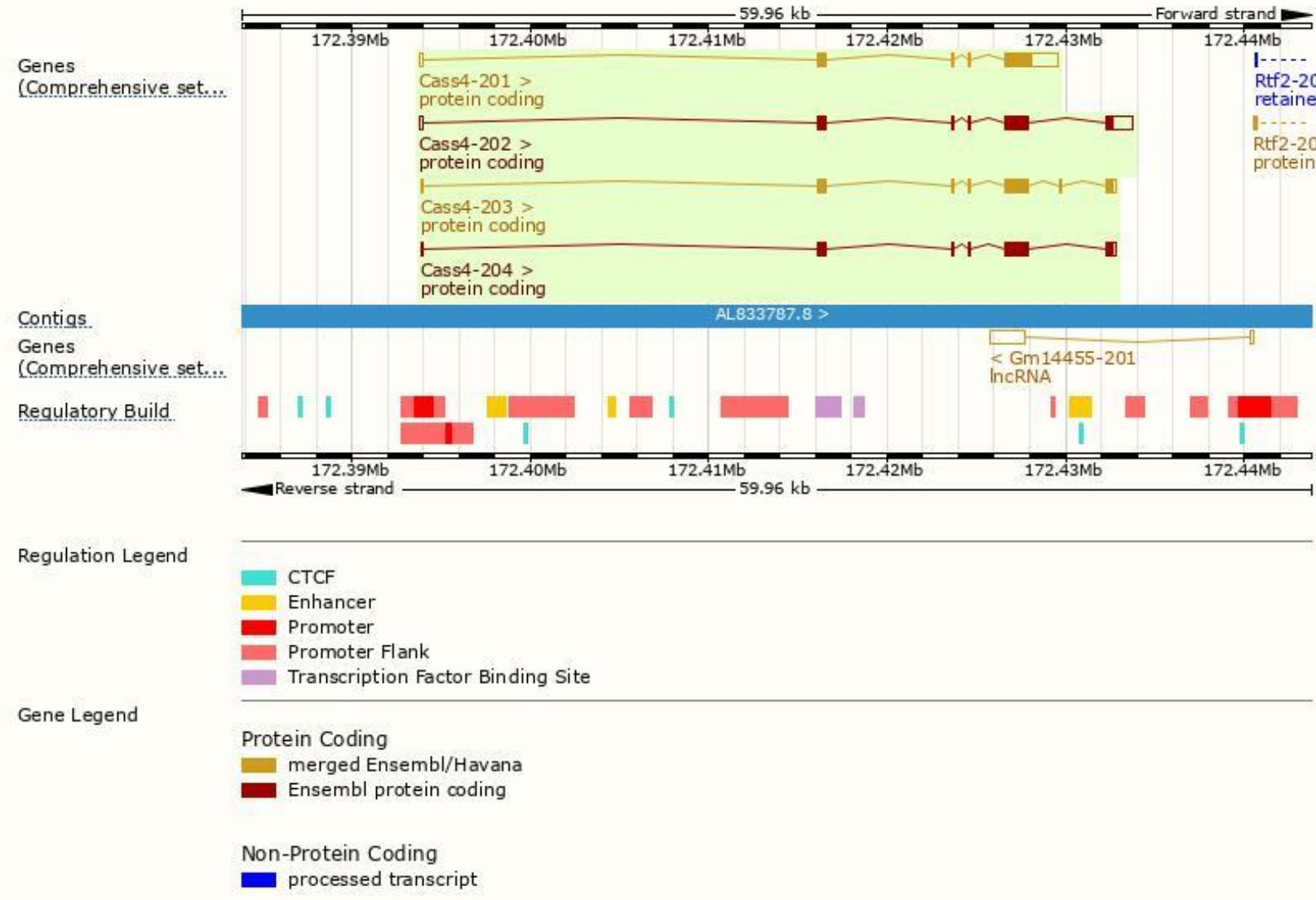
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cass4-202	ENSMUST00000103073.8	3600	778aa	Protein coding	CCDS71205	A0A0R4J199	TSL:1 GENCODE basic APPRIS ALT2
Cass4-203	ENSMUST00000109136.2	2702	804aa	Protein coding	CCDS38347	Q08EC4	TSL:1 GENCODE basic APPRIS P3
Cass4-201	ENSMUST00000099061.8	3731	685aa	Protein coding	-	Q08EC4	TSL:1 GENCODE basic
Cass4-204	ENSMUST00000228775.1	2629	780aa	Protein coding	-	Q08EC4	GENCODE basic APPRIS ALT2

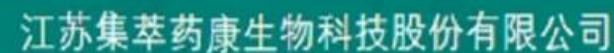
The strategy is based on the design of *Cass4-203* transcript,the transcription is shown below:



Genomic location distribution



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GemPharmatech



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

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