

Adamtsl5 Cas9-CKO Strategy

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Project Overview

Project Name

Adamtsl5

Project type

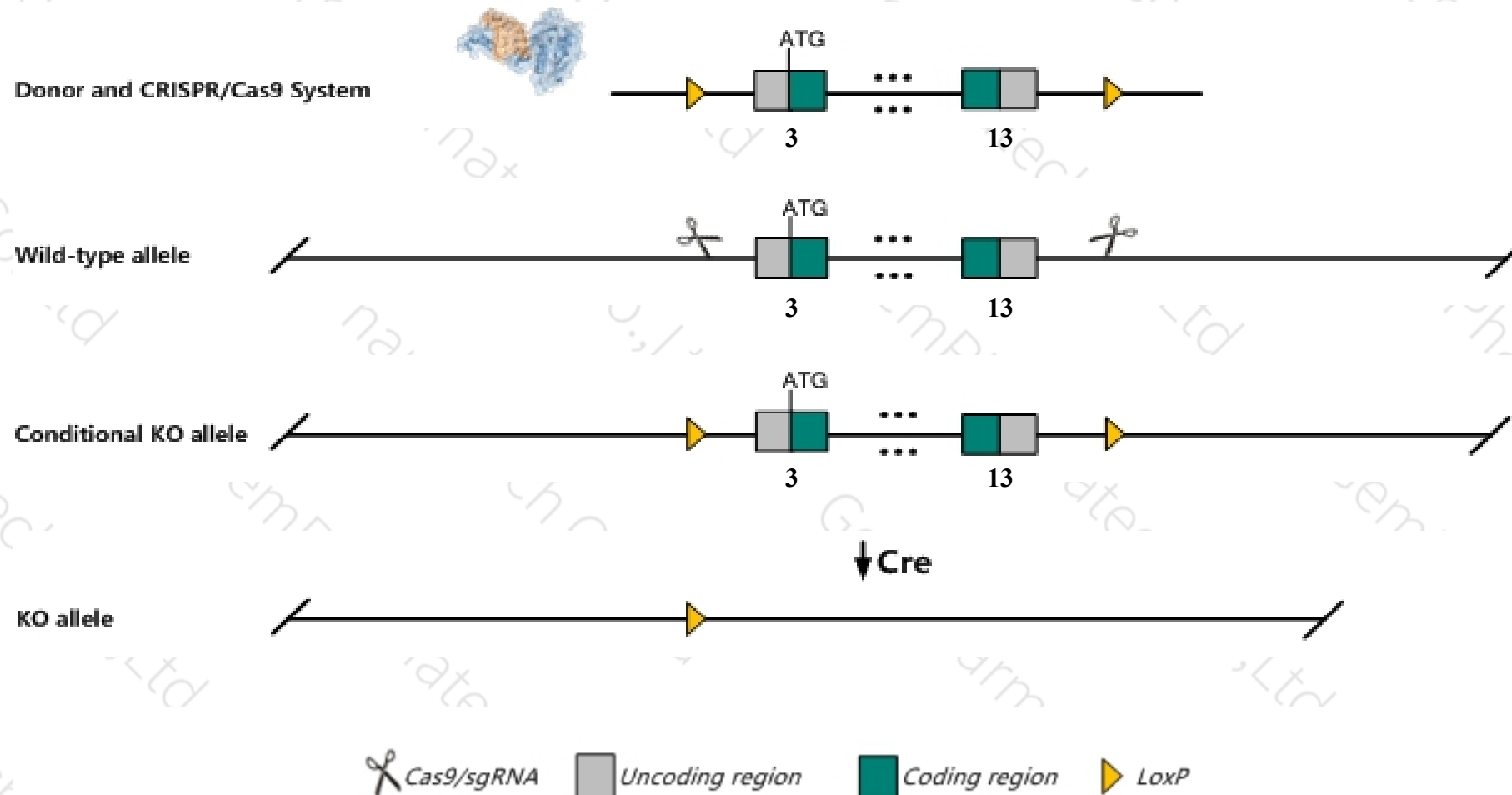
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Adamtsl5* gene. The schematic diagram is as follows:



- The *Adamtsl5* gene has 7 transcripts. According to the structure of *Adamtsl5* gene, exon3-exon13 of *Adamtsl5-201*(ENSMUST00000095446.9) transcript is recommended as the knockout region. The region contains all 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 *Adamtsl5* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA and Donor 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 flox mice was knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

- The *Adamtsl5* gene is located on the Chr10. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Adamtsl5 ADAMTS-like 5 [Mus musculus (house mouse)]

Gene ID: 66548, updated on 13-Mar-2020

Summary



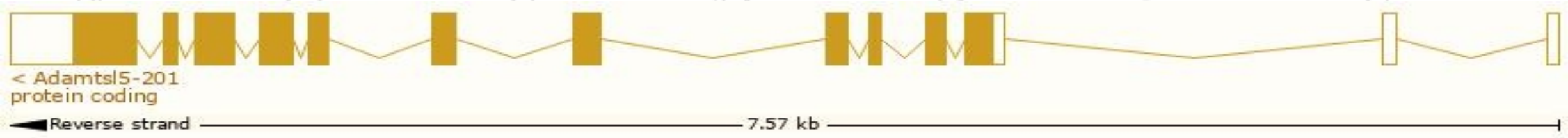
Official Symbol	Adamtsl5 provided by MGI
Official Full Name	ADAMTS-like 5 provided by MGI
Primary source	MGI:MGI:1913798
See related	Ensembl:ENSMUSG00000043822
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2010109H09Rik, Thsd6
Expression	Biased expression in duodenum adult (RPKM 43.1), small intestine adult (RPKM 30.3) and 14 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

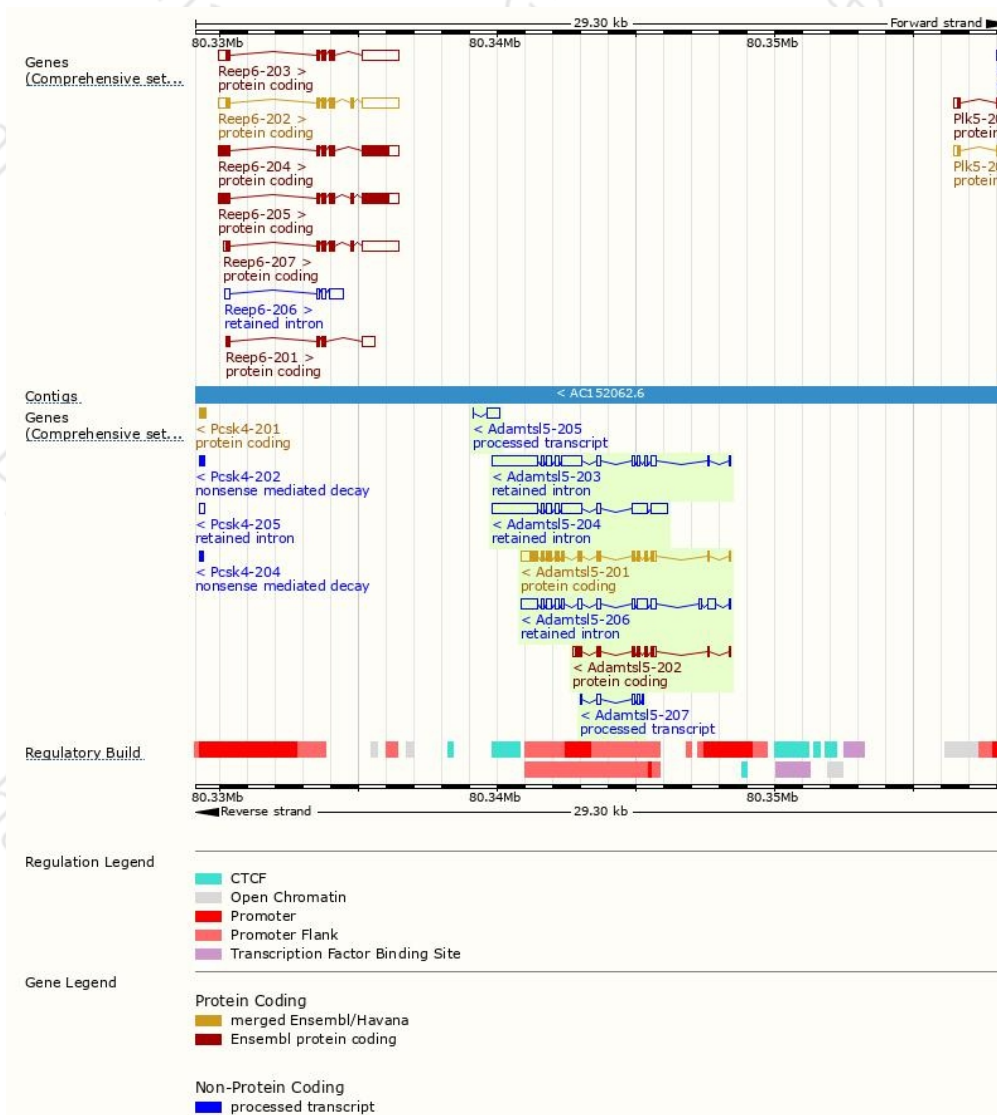
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Adamtsl5-201	ENSMUST00000095446.9	1957	485aa	Protein coding	CCDS48628	D3Z689	TSL:5 GENCODE basic APPRIS P1
Adamtsl5-202	ENSMUST00000105352.1	989	244aa	Protein coding	-	Q9CRC7	TSL:1 GENCODE basic
Adamtsl5-205	ENSMUST00000137571.1	471	No protein	Processed transcript	-	-	TSL:5
Adamtsl5-207	ENSMUST00000138705.2	343	No protein	Processed transcript	-	-	TSL:3
Adamtsl5-204	ENSMUST00000128845.7	4104	No protein	Retained intron	-	-	TSL:2
Adamtsl5-203	ENSMUST00000124789.7	3520	No protein	Retained intron	-	-	TSL:5
Adamtsl5-206	ENSMUST00000137576.7	2464	No protein	Retained intron	-	-	TSL:2

The strategy is based on the design of *Adamtsl5-201* transcript,the transcription is shown below:



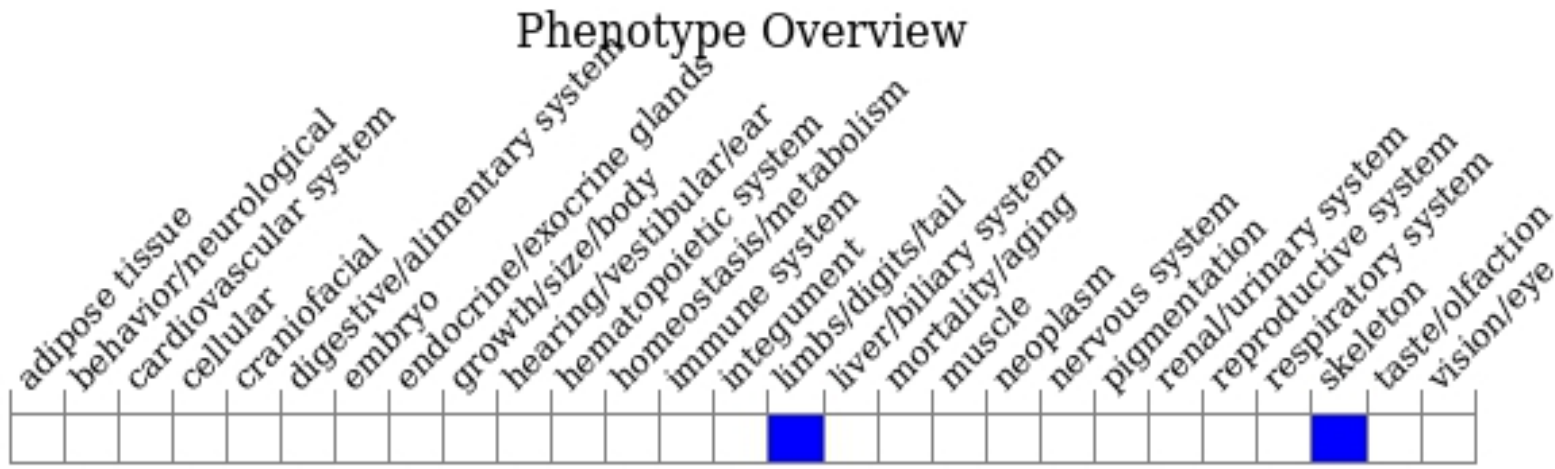
Genomic location distribution



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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