

Crcp Cas9-CKO Strategy

Designer: Xueting Zhang

Reviewer: Yanhua Shen

Date: 2020-02-19

Project Overview

Project Name

Crcp

Project type

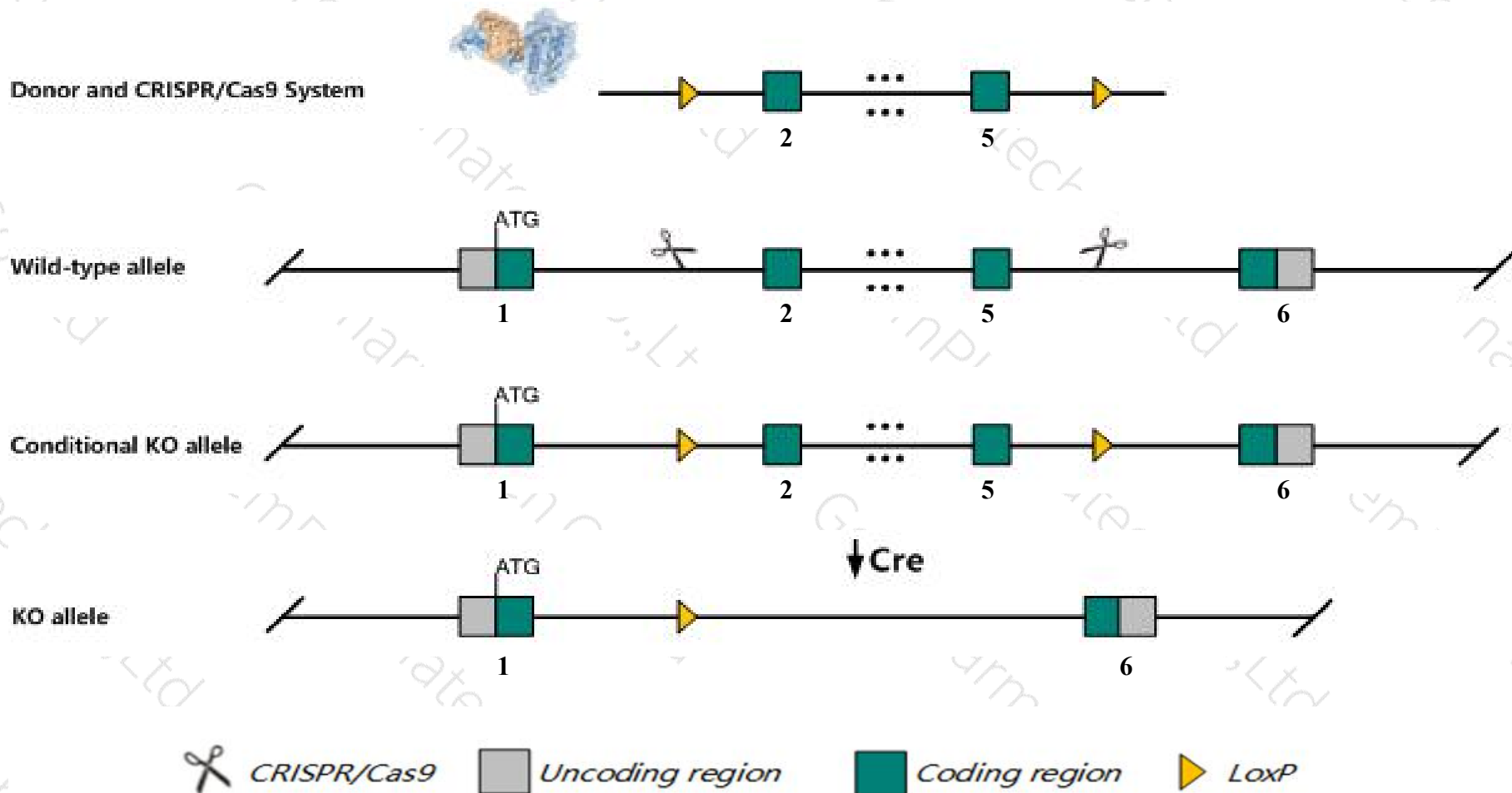
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

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



- The *Crcp* gene has 6 transcripts. According to the structure of *Crcp* gene, exon2-exon5 of *Crcp-201* (ENSMUST00000026608.10) transcript is recommended as the knockout region. The region contains 289bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Crcp* gene. The brief process is as follows: CRISPR/Cas9 system 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 will be 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 floxed region is near to the N-terminal of *Asl* gene, this strategy may influence the regulatory function of the N-terminal of *Asl* gene.
- The *Crcp* gene is located on the Chr5. 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)

Crcp calcitonin gene-related peptide-receptor component protein [*Mus musculus* (house mouse)]

Gene ID: 12909, updated on 12-Aug-2019

Summary

- Official Symbol** Crcp provided by [MGI](#)
- Official Full Name** calcitonin gene-related peptide-receptor component protein provided by [MGI](#)
- Primary source** [MGI:MGI:1100818](#)
- See related** [Ensembl:ENSMUSG000000025532](#)
- Gene type** protein coding
- RefSeq status** PROVISIONAL
- Organism** [Mus musculus](#)
- Lineage** Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
- Also known as** AL022669
- Expression** Ubiquitous expression in testis adult (RPKM 19.8), CNS E18 (RPKM 14.2) and 28 other tissues [See more](#)
- Orthologs** [human](#) [all](#)

Genomic context

Location: 5; 5 G1.3

See Crcp in [Genome Data Viewer](#)

Exon count: 6

Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	5	NC_000071.6 (130029306..130060787)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	5	NC_000071.5 (130505176..130536657)

Transcript information (Ensembl)

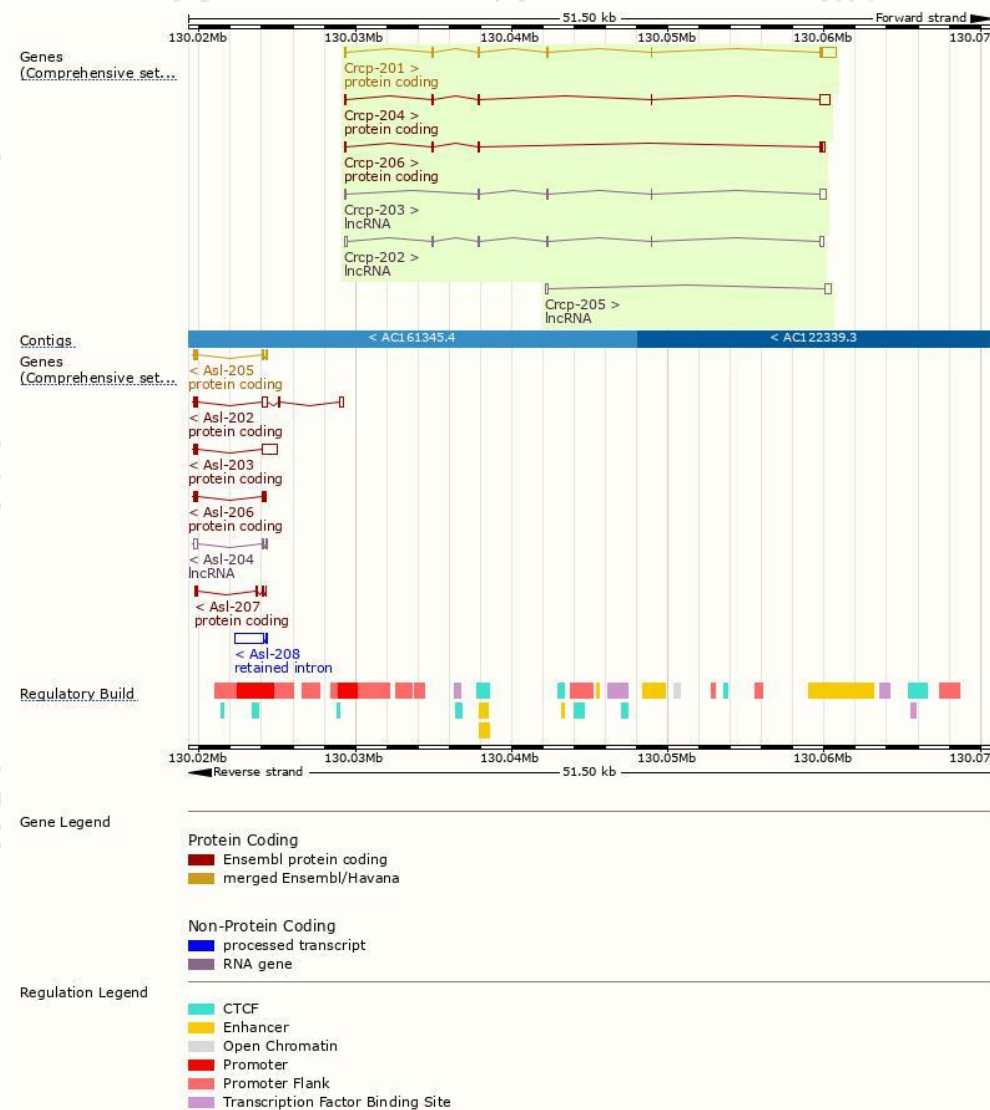
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Crcp-201	ENSMUST00000026608.10	1492	148aa	Protein coding	CCDS19706	O35427	TSL:1 GENCODE basic APPRIS P1
Crcp-204	ENSMUST00000202163.3	931	72aa	Protein coding	-	A0A0J9YVE5	TSL:2 GENCODE basic
Crcp-206	ENSMUST00000202756.1	600	97aa	Protein coding	-	A0A0J9YU23	TSL:2 GENCODE basic
Crcp-203	ENSMUST00000201777.3	742	No protein	lncRNA	-	-	TSL:3
Crcp-202	ENSMUST00000156729.1	669	No protein	lncRNA	-	-	TSL:2
Crcp-205	ENSMUST00000202691.1	453	No protein	lncRNA	-	-	TSL:5

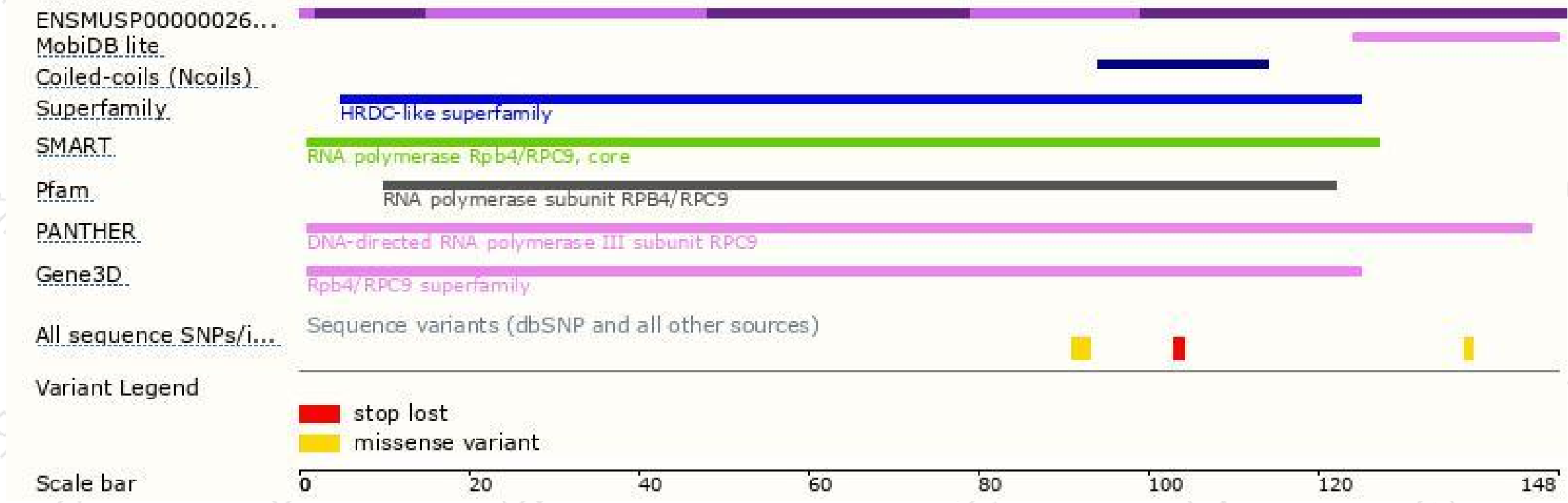
The strategy is based on the design of *Crcp-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

