

Cdcp1 Cas9-CKO Strategy

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Project Overview

Project Name

Cdcp1

Project type

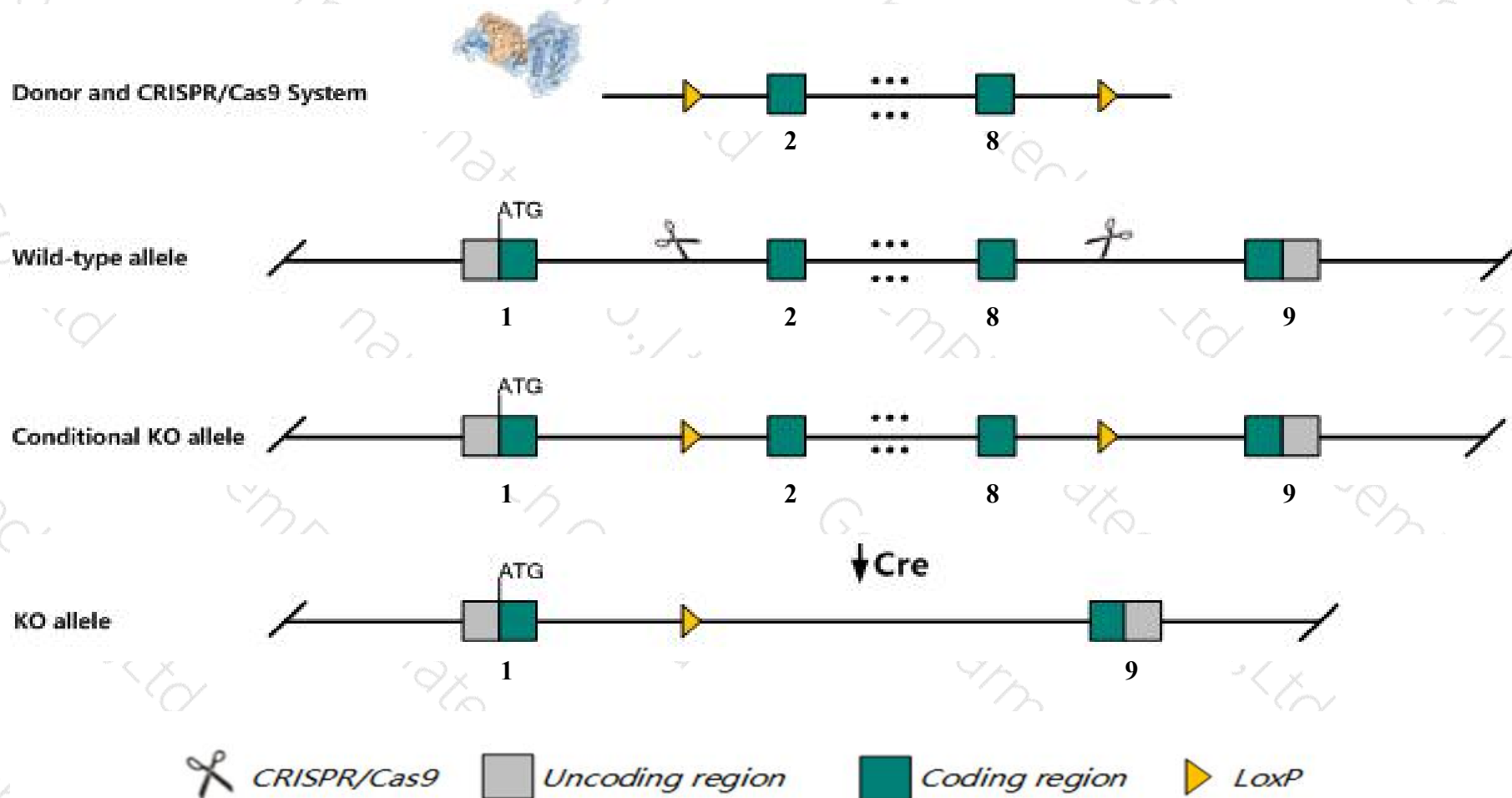
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cdcp1* gene. The schematic diagram is as follows:



- The *Cdcp1* gene has 3 transcripts. According to the structure of *Cdcp1* gene, exon2-exon8 of *Cdcp1-201* (ENSMUST00000039229.7) transcript is recommended as the knockout region. The region contains 1996bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Cdcp1* 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.

- According to the existing MGI data, Mice homozygous for a knock-out allele are viable and fertile.
- The *Cdcp1* gene is located on the Chr9. 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)

Cdcp1 CUB domain containing protein 1 [Mus musculus (house mouse)]

Gene ID: 109332, updated on 31-Jan-2019

Summary



Official Symbol	Cdcp1 provided by MGI
Official Full Name	CUB domain containing protein 1 provided by MGI
Primary source	MGI:MGI:2442010
See related	Ensembl:ENSMUSG00000035498
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	9030022E12Rik, AA409659, E030027H19Rik
Expression	Biased expression in large intestine adult (RPKM 12.9), colon adult (RPKM 10.2) and 14 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

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

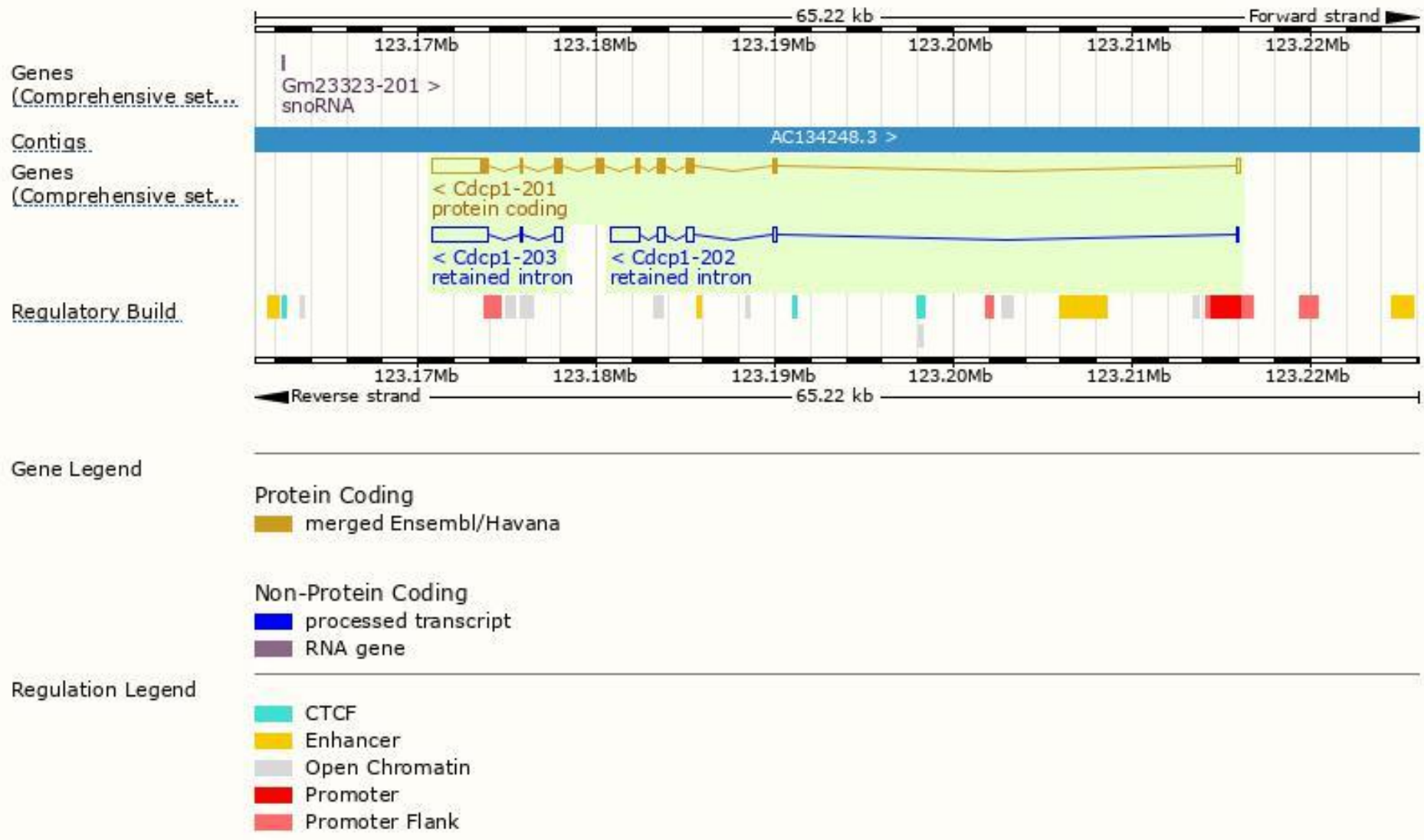
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cdcp1-201	ENSMUST00000039229.7	5310	833aa	Protein coding	CCDS23657	Q5U462	TSL:1 GENCODE basic APPRIS P1
Cdcp1-203	ENSMUST00000148158.2	3607	No protein	Retained intron	-	-	TSL:1
Cdcp1-202	ENSMUST00000140915.1	2738	No protein	Retained intron	-	-	TSL:1

The strategy is based on the design of *Cdcp1-201* transcript, The transcription is shown below

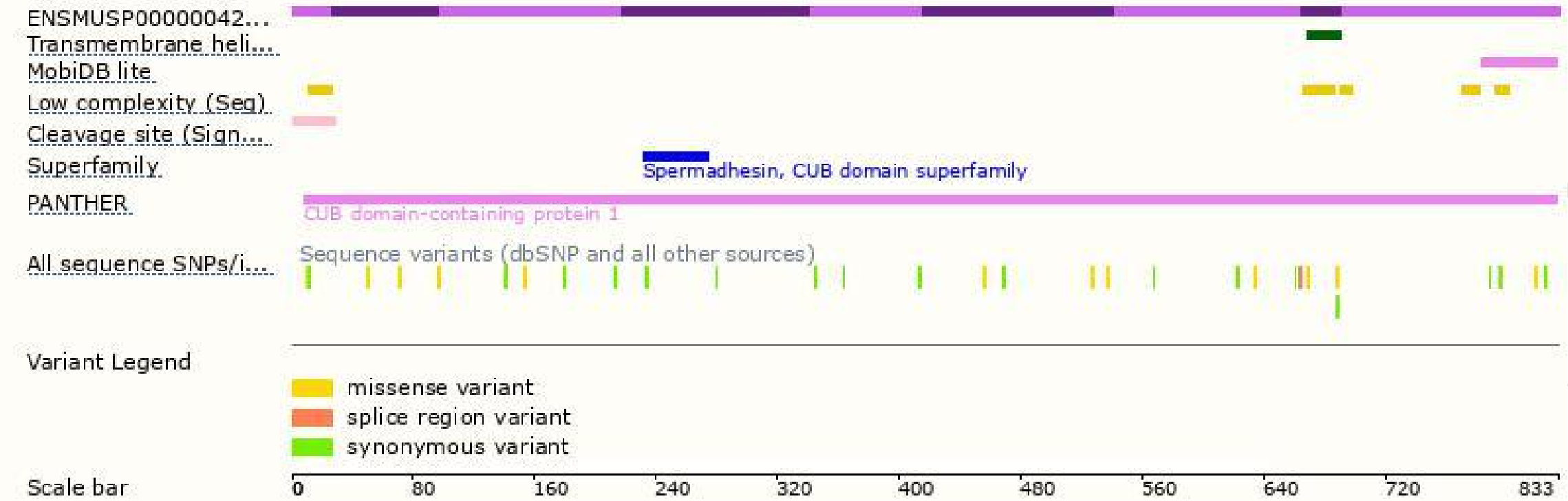




Genomic location distribution



Protein domain



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

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