

Cep295 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Cep295

Project type

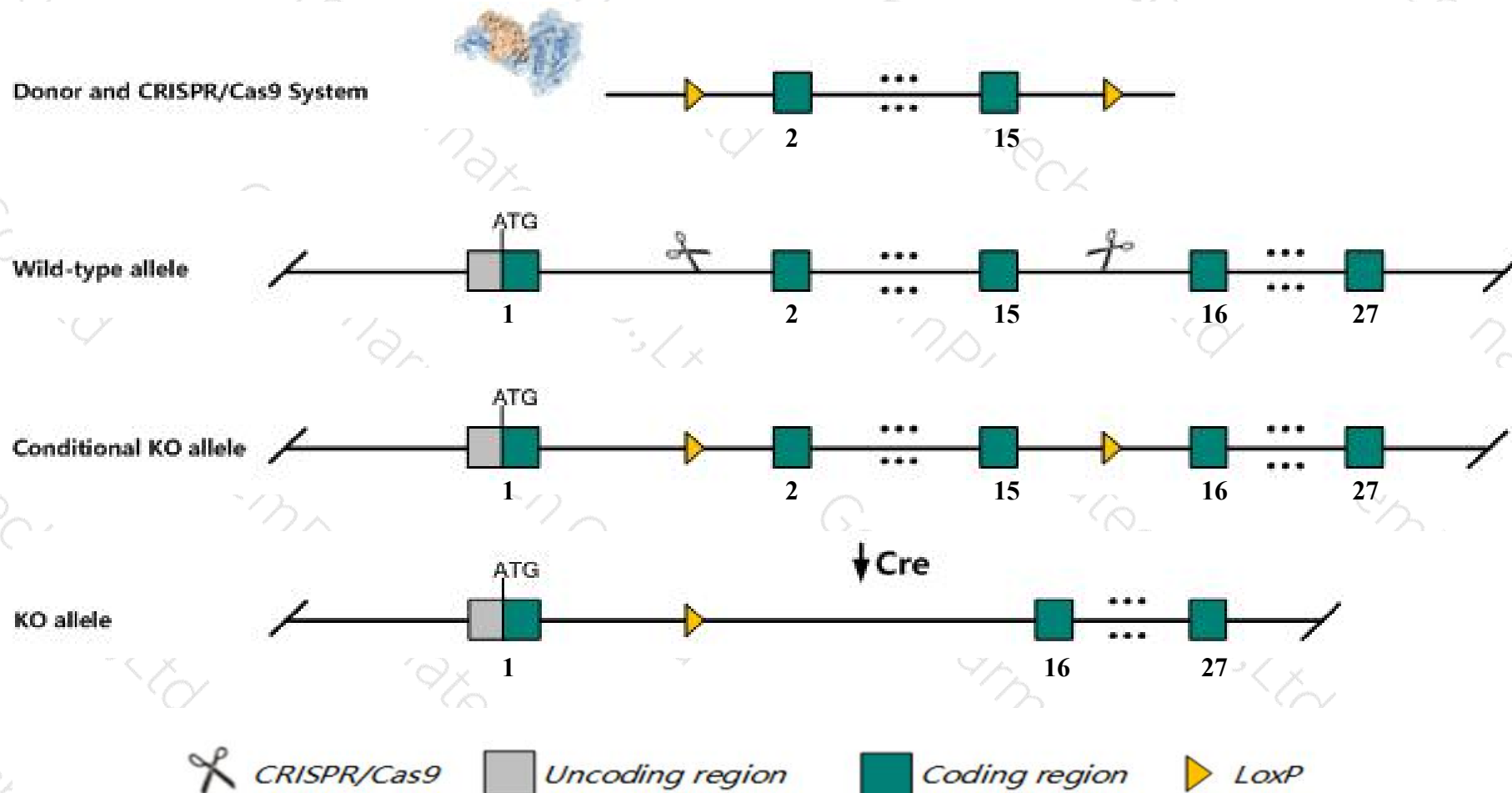
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cep295* gene. The schematic diagram is as follows:



Technical routes

- The *Cep295* gene has 14 transcripts. According to the structure of *Cep295* gene, exon2-exon15 of *Cep295-203* (ENSMUST00000098979.10) transcript is recommended as the knockout region. The region contains 5105bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Cep295* 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.

Notice

- The *Cep295* 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)

Cep295 centrosomal protein 295 [Mus musculus (house mouse)]

Gene ID: 319675, updated on 31-Jan-2019

Summary



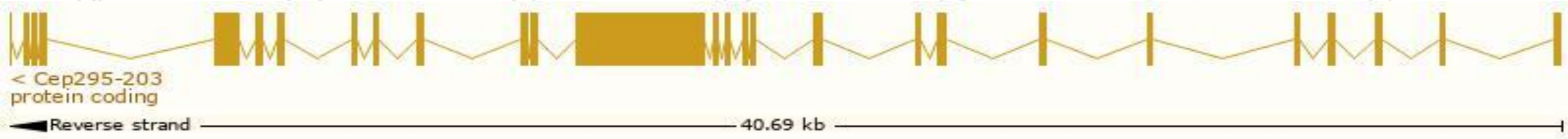
Official Symbol	Cep295 provided by MGI
Official Full Name	centrosomal protein 295 provided by MGI
Primary source	MGI:MGI:2442521
See related	Ensembl:ENSMUSG00000046111
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	5830418K08Rik, 5832426L23Rik, Gm1131, Kiaa1731
Expression	Broad expression in CNS E11.5 (RPKM 4.7), testis adult (RPKM 4.0) and 23 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

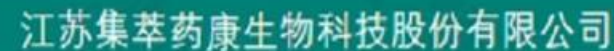
The gene has 14 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cep295-203	ENSMUST00000098979.10	7188	2380aa	Protein coding	CCDS52727	E9QPW4	TSL:5 GENCODE basic APPRIS P2
Cep295-208	ENSMUST00000161132.8	7605	2460aa	Protein coding	-	A0A1N9NPH8	TSL:5 GENCODE basic APPRIS ALT2
Cep295-207	ENSMUST00000160946.7	4144	1202aa	Protein coding	-	F7BWD7	CDS 5' incomplete TSL:5
Cep295-210	ENSMUST00000162264.1	771	257aa	Protein coding	-	F6V9M5	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete TSL:3 APPRIS ALT2
Cep295-213	ENSMUST00000217140.1	387	70aa	Protein coding	-	A0A1L1STC4	CDS 5' incomplete TSL:3
Cep295-204	ENSMUST00000159156.1	333	111aa	Protein coding	-	F6URK1	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete TSL:5 APPRIS ALT2
Cep295-214	ENSMUST00000217407.1	6154	No protein	Retained intron	-	-	TSL:1
Cep295-201	ENSMUST00000058041.11	3984	No protein	Retained intron	-	-	TSL:2
Cep295-202	ENSMUST00000059410.14	3538	No protein	Retained intron	-	-	TSL:1
Cep295-211	ENSMUST00000162689.1	2999	No protein	Retained intron	-	-	TSL:1
Cep295-209	ENSMUST00000161533.1	681	No protein	Retained intron	-	-	TSL:3
Cep295-206	ENSMUST00000160692.1	672	No protein	Retained intron	-	-	TSL:3
Cep295-205	ENSMUST00000160238.1	534	No protein	Retained intron	-	-	TSL:3
Cep295-212	ENSMUST00000163010.7	684	No protein	lncRNA	-	-	TSL:3

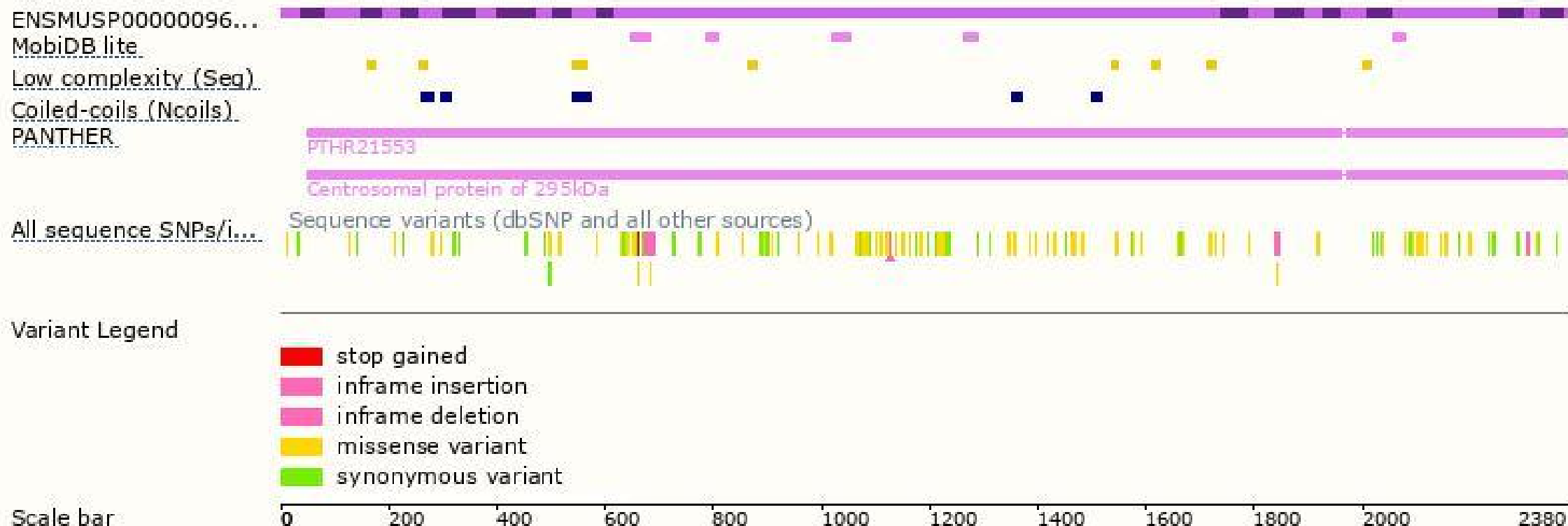
The strategy is based on the design of *Cep295-203* transcript,The transcription is shown below



集萃药康
GemPharmatech



Protein domain



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

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