

***Reep5* Cas9-KO Strategy**

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Project Overview

Project Name

Reep5

Project type

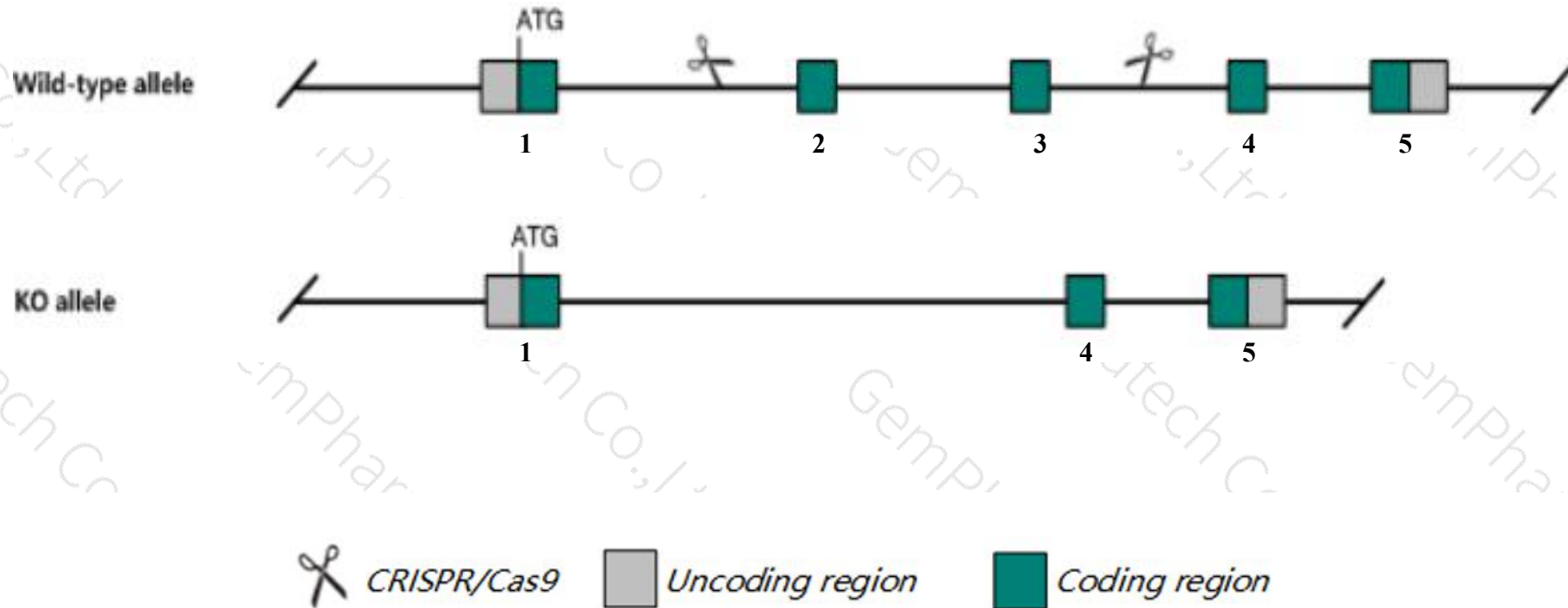
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Reep5* gene. The schematic diagram is as follows:



- The *Reep5* gene has 5 transcripts. According to the structure of *Reep5* gene, exon2-exon3 of *Reep5*-201(ENSMUST00000006027.6) transcript is recommended as the knockout region. The region contains 233bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Reep5* gene. The brief process is as follows: CRISPR/Cas9 system 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.

- According to the existing MGI data, mice homozygous for a gene trap insertion exhibit no detectable mutant phenotype.
- The *Reep5* gene is located on the Chr18. 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)

Reep5 receptor accessory protein 5 [Mus musculus (house mouse)]

Gene ID: 13476, updated on 13-Mar-2020

Summary



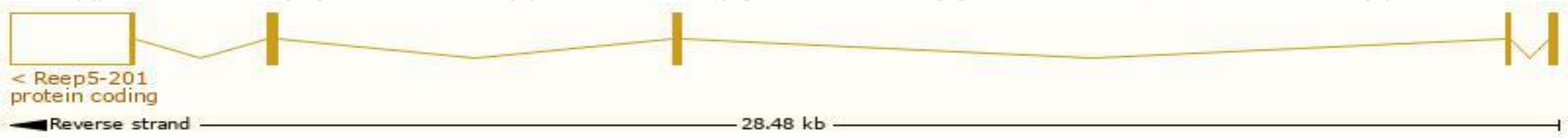
Official Symbol	Reep5 provided by MGI
Official Full Name	receptor accessory protein 5 provided by MGI
Primary source	MGI:MGI:1270152
See related	Ensembl:ENSMUSG00000005873
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AI324241, AU022809, AW495741, DP1/TB2, Dp1, R74856, TB2/DP1
Expression	Ubiquitous expression in CNS E18 (RPKM 93.0), subcutaneous fat pad adult (RPKM 90.5) and 27 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

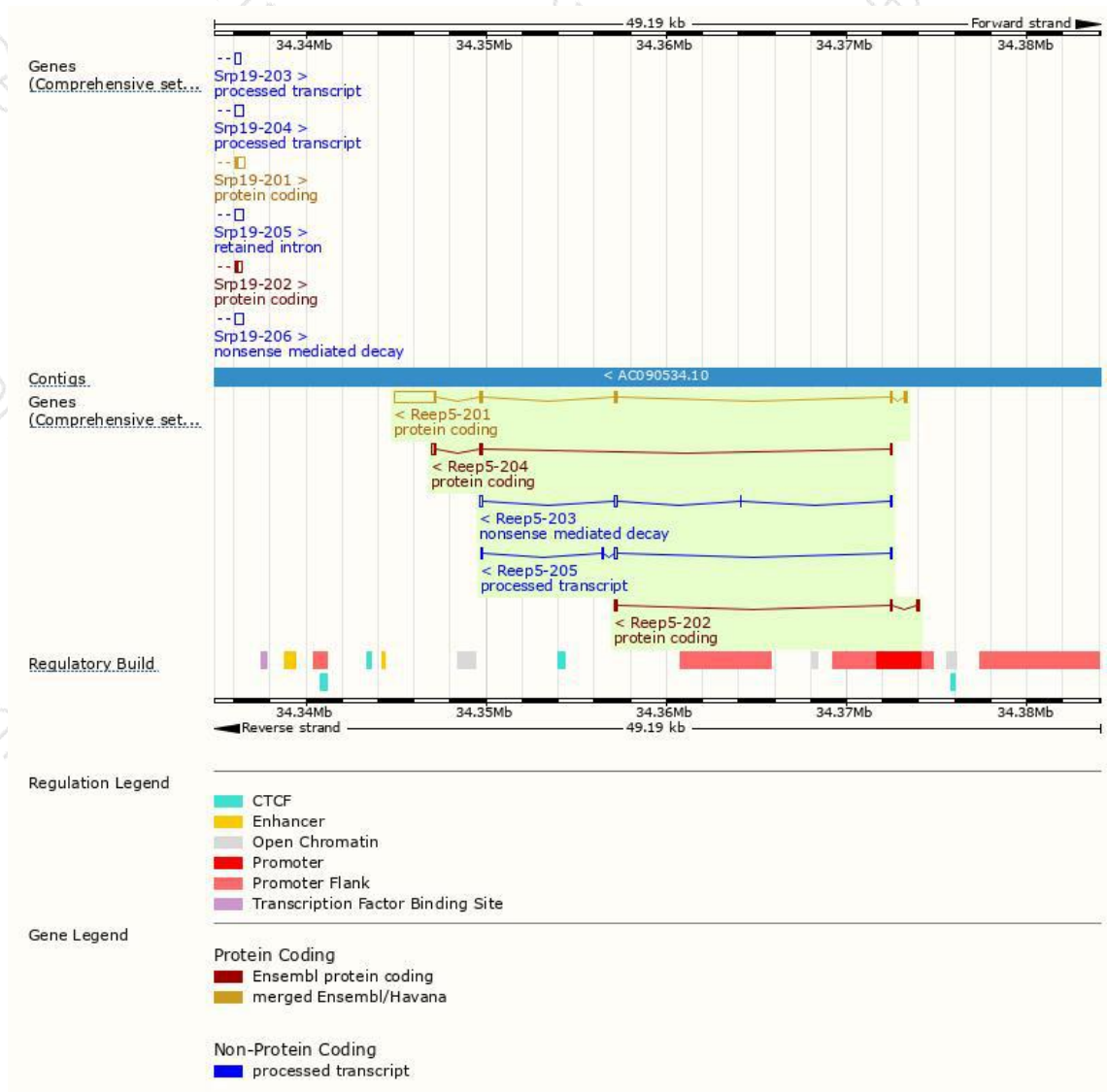
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Reep5-201	ENSMUST00000006027.6	2852	189aa	Protein coding	CCDS50247	G3X8R0	TSL:1 GENCODE basic APPRIS P1
Reep5-204	ENSMUST00000236887.1	439	103aa	Protein coding	-	A0A494BBE3	CDS 5' incomplete
Reep5-202	ENSMUST00000235153.1	406	119aa	Protein coding	-	A0A494BBG4	CDS 3' incomplete
Reep5-203	ENSMUST00000235227.1	430	41aa	Nonsense mediated decay	-	A0A494BB24	CDS 5' incomplete
Reep5-205	ENSMUST00000237414.1	399	No protein	Processed transcript	-	-	

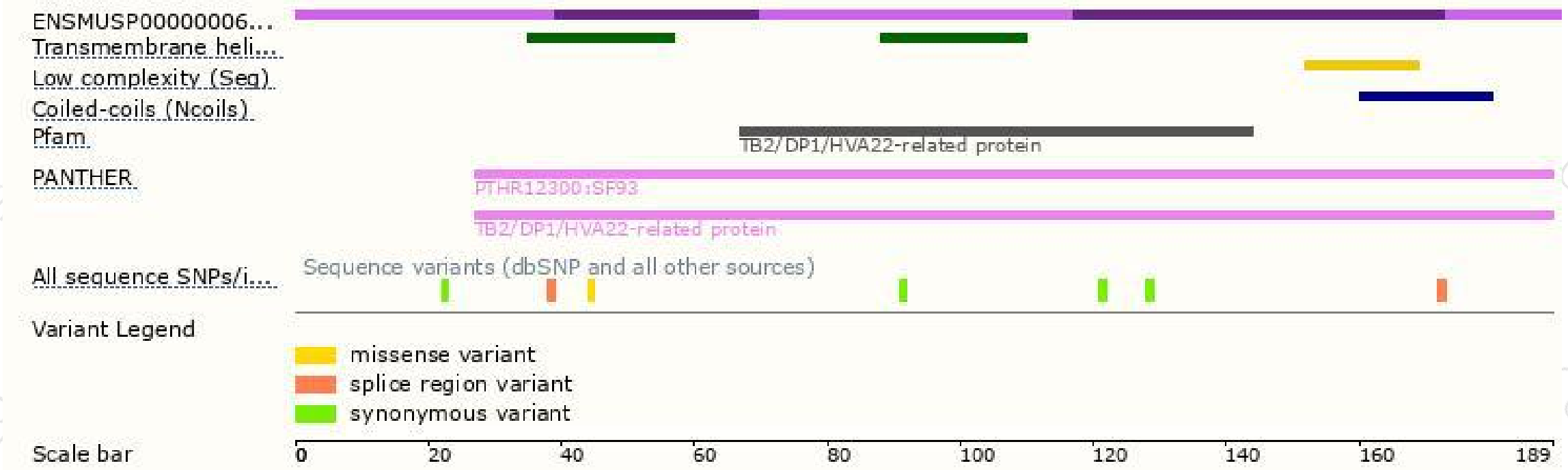
The strategy is based on the design of *Reep5-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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