

Rps24 Cas9-KO Strategy

Designer: Xueting Zhang
reviewer: Yanhua Shen
Date: 2020-02-26

Project Overview

Project Name

Rps24

Project type

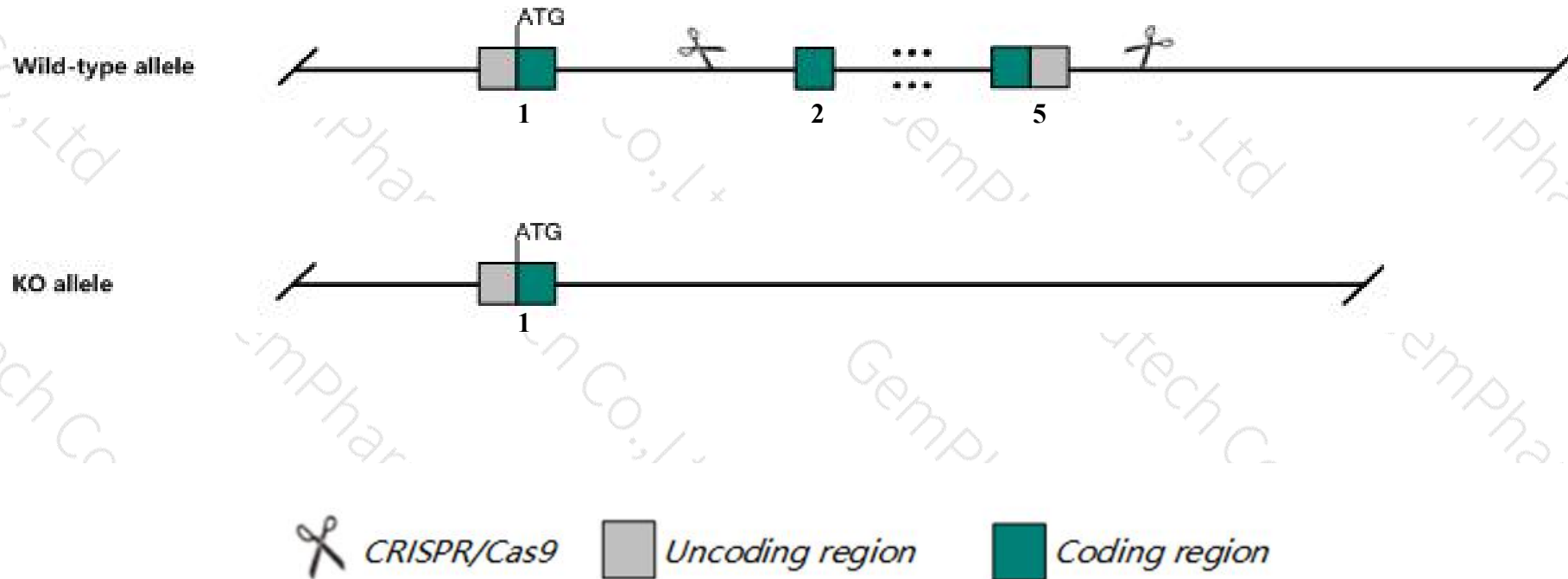
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rps24* gene. The schematic diagram is as follows:



- The *Rps24* gene has 12 transcripts. According to the structure of *Rps24* gene, exon2-exon5 of *Rps24-210* (ENSMUST00000225023.1) transcript is recommended as the knockout region. The region contains most 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 *Rps24* gene. The brief process is as follows: CRISPR/Cas9 system

- The knockout region is near to the N-terminal of *Polr3a* gene, this strategy may influence the regulatory function of the N-terminal of *Polr3a* gene.
- The *Rps24* gene is located on the Chr14. 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)

Rps24 ribosomal protein S24 [*Mus musculus* (house mouse)]

Gene ID: 20088, updated on 24-Oct-2019

Summary

- Official Symbol** Rps24 provided by MGI
- Official Full Name** ribosomal protein S24 provided by MGI
- Primary source** MGI:MGI:98147
- See related** Ensembl:ENSMUSG00000025290
- 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
- Expression** Ubiquitous expression in CNS E11.5 (RPKM 223.6), bladder adult (RPKM 143.0) and 24 other tissues [See more](#)
- Orthologs** [human](#) [all](#)

Genomic context

Location: 14; 14 A3

Exon count: 8

See Rps24 in [Genome Data Viewer](#)

Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	14	NC_000080.6 (24490678..24496960)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	14	NC_000080.5 (25309903..25315368)

Transcript information (Ensembl)

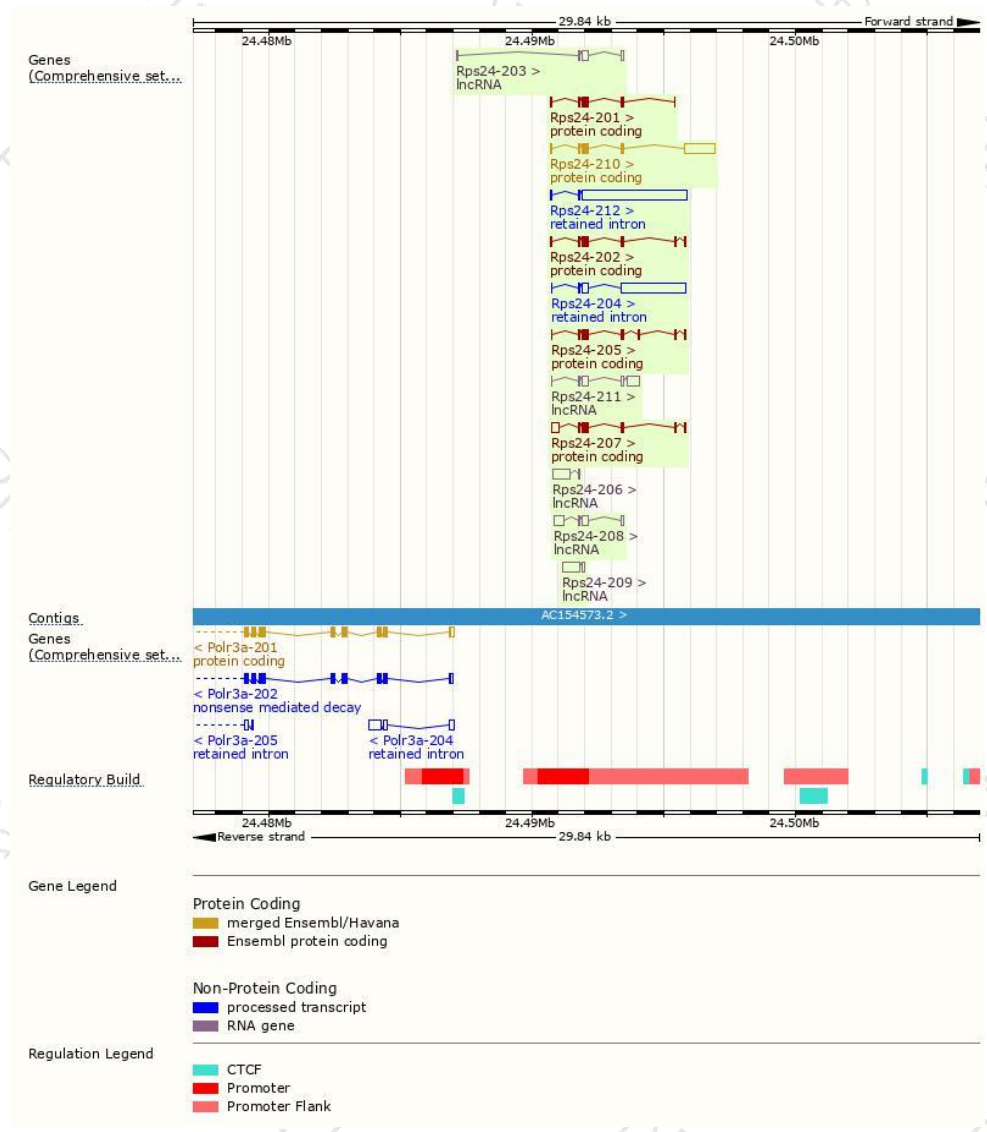
The gene has 12 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rps24-210	ENSMUST00000225023.1	1613	133aa	Protein coding	CCDS36829	P62849 Q5M9M7	GENCODE basic APPRIS P4
Rps24-202	ENSMUST00000169826.2	519	130aa	Protein coding	CCDS36830	P62849	TSL:1 GENCODE basic APPRIS ALT 1
Rps24-201	ENSMUST00000112384.9	468	130aa	Protein coding	CCDS36830	P62849	TSL:5 GENCODE basic APPRIS ALT 1
Rps24-207	ENSMUST00000224568.1	714	118aa	Protein coding	-	A0A286YEB7	GENCODE basic
Rps24-205	ENSMUST00000223999.1	525	131aa	Protein coding	-	P62849	GENCODE basic APPRIS ALT 1
Rps24-212	ENSMUST00000225994.1	4059	No protein	Retained intron	-	-	
Rps24-204	ENSMUST00000223939.1	2769	No protein	Retained intron	-	-	
Rps24-211	ENSMUST00000225117.1	887	No protein	lncRNA	-	-	
Rps24-209	ENSMUST00000224699.1	750	No protein	lncRNA	-	-	
Rps24-206	ENSMUST00000224549.1	745	No protein	lncRNA	-	-	
Rps24-208	ENSMUST00000224569.1	686	No protein	lncRNA	-	-	
Rps24-203	ENSMUST00000223931.1	461	No protein	lncRNA	-	-	

The strategy is based on the design of *Rps24-210* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

