

Rps5 Cas9-CKO Strategy

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Reviewer :

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Design Date:

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Project Overview

Project Name

Rps5

Project type

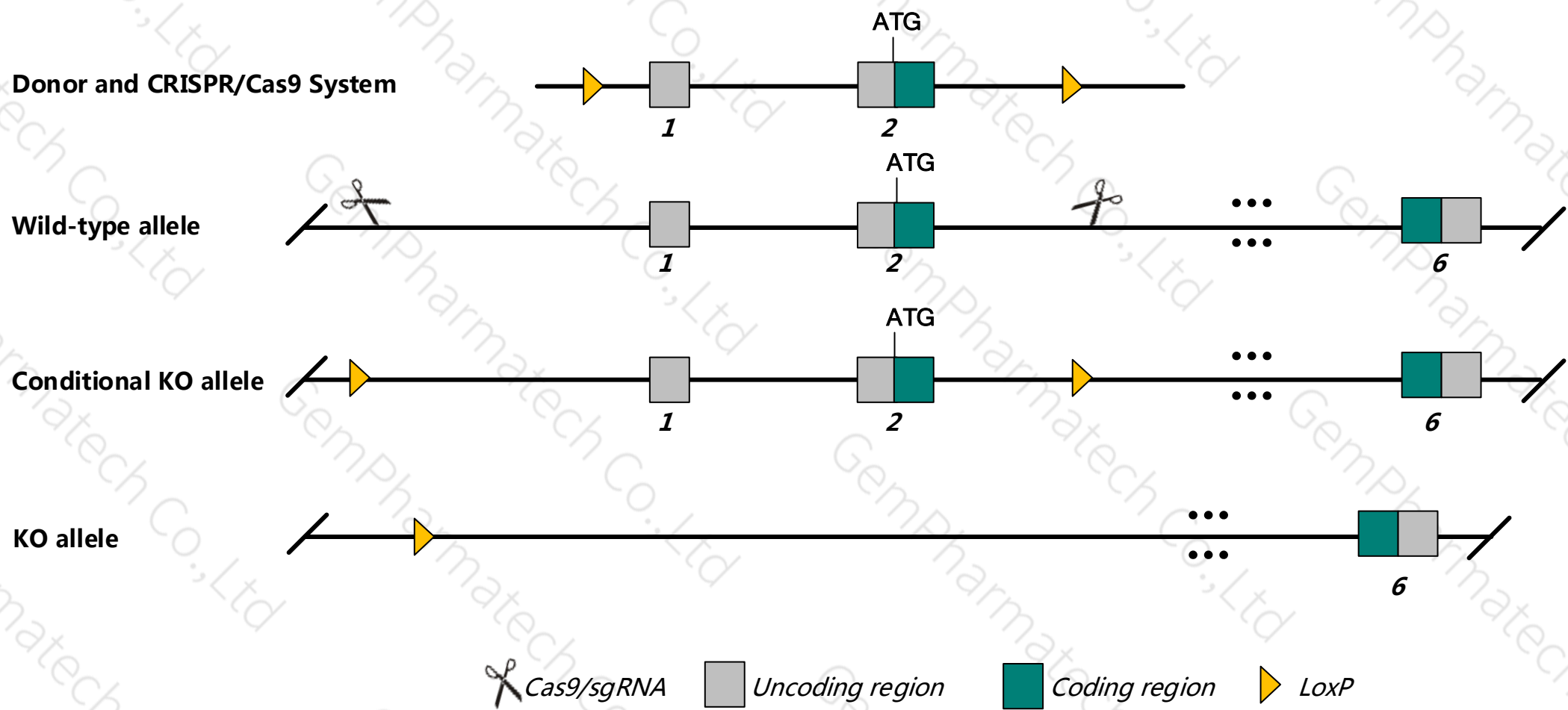
Cas9-CKO

Animal background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rps5* gene. The schematic diagram is as follows:



Technical routes

- The *Rps5* gene has 6 transcripts, According to the structure of *Rps5* gene, exon1-exon2 of *Rps5*-201 transcript is recommended as the knockout region. The region contains the initiation codon ATG coding sequence. Knock out the region, result in destruction of protein.
- This project uses CRISPR/Cas9 technology to modify *Rps5* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed, Cas9, sgRNA and donor were microinjected into fertilized eggs of C57BL/6JGpt mice and homologous recombination was carried out to obtain F0 mice. A stable and hereditary F1 generation mouse model was obtained by mating F0 generation mice with C57BL/6JGpt mice which were confirmed positive by PCR-sequencing.
- The flox mice was 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 *Rps5* gene is located in the Chr7. If the knockout mice are mixed with other mice, two target genes are avoided on the same chromosome as possible, otherwise the offspring of mice with double gene positive and homozygous gene knockout can not be obtained.

Gene information (NCBI)

Rps5 ribosomal protein S5 [*Mus musculus* (house mouse)]

Gene ID: 20103, updated on 8-Dec-2018

Summary

Official Symbol Rps5 provided by [MGI](#)

Official Full Name ribosomal protein S5 provided by [MGI](#)

Primary source [MGI:MGI:1097682](#)

See related [Ensembl:ENSMUSG00000012848](#)

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 AA617411

Expression Ubiquitous expression in ovary adult (RPKM 1722.8), large intestine adult (RPKM 951.0) and 28 other tissues [See more](#)

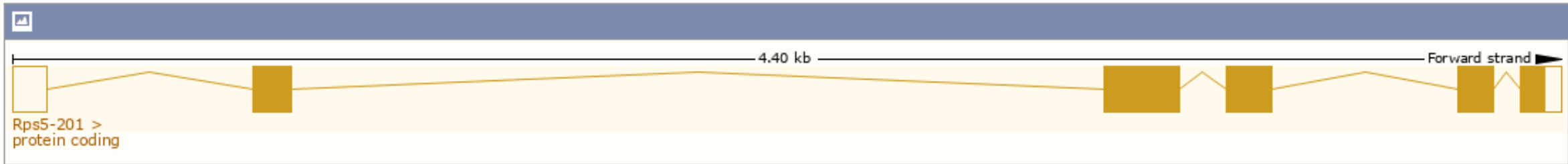
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

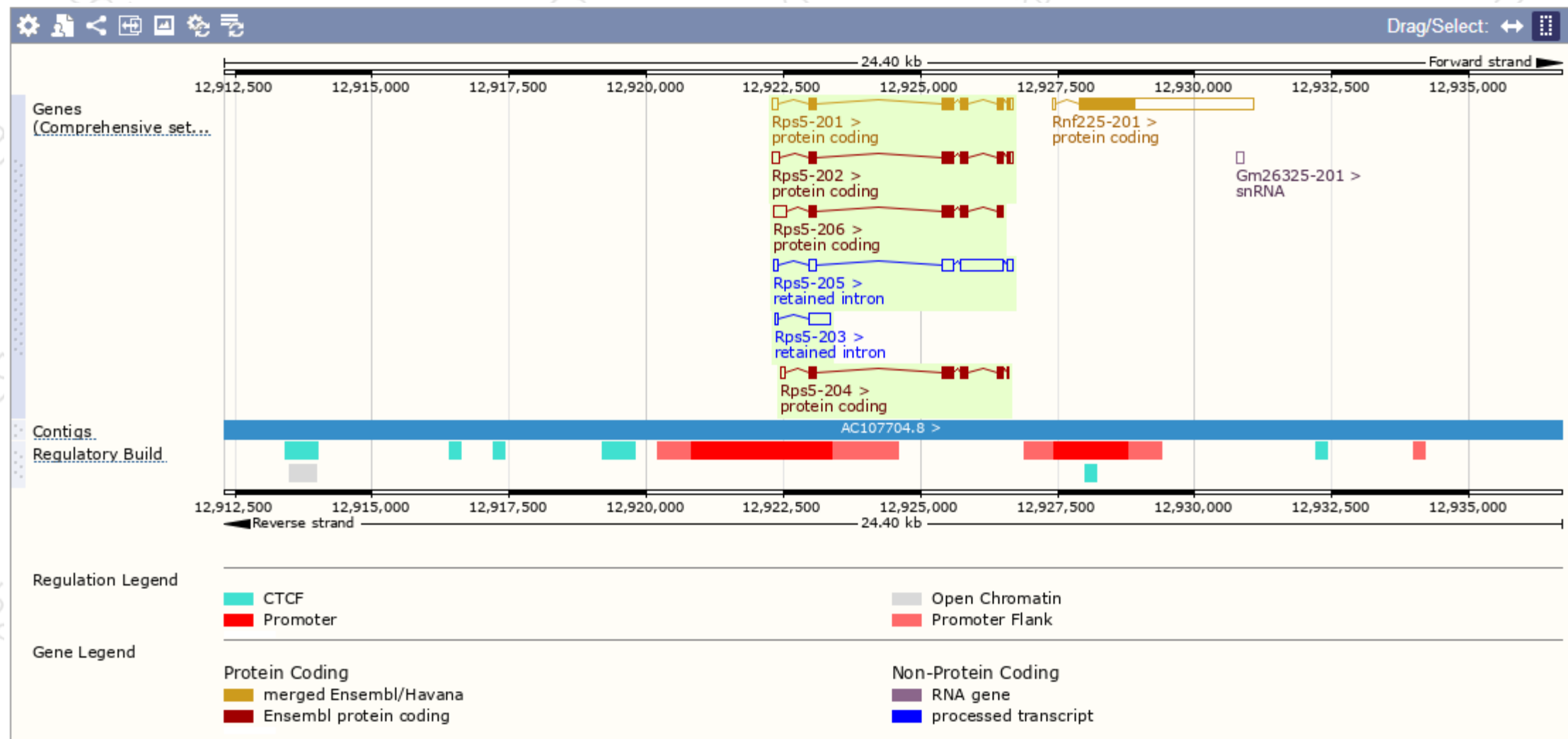
The gene has 6 transcripts, and all transcripts are shown below :

Show/hide columns (1 hidden)								Filter	
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	RefSeq	Flags	
Rps5-202	ENSMUST00000108539.7	794	204aa	Protein coding	CCDS20817	Q91V55	-	TSL:2	GENCODE basic APPRIS P1
Rps5-201	ENSMUST00000004554.13	761	204aa	Protein coding	CCDS20817	Q91V55	NM_009095 NP_033121	TSL:1	GENCODE basic APPRIS P1
Rps5-206	ENSMUST00000147435.7	778	182aa	Protein coding	-	D3YYM6	-	CDS 3' incomplete	TSL:5
Rps5-204	ENSMUST00000137329.3	652	189aa	Protein coding	-	D3Z1S8	-	CDS 3' incomplete	TSL:5
Rps5-205	ENSMUST00000139349.2	1248	No protein	Retained intron	-	-	-	TSL:5	
Rps5-203	ENSMUST00000131795.1	445	No protein	Retained intron	-	-	-	TSL:2	

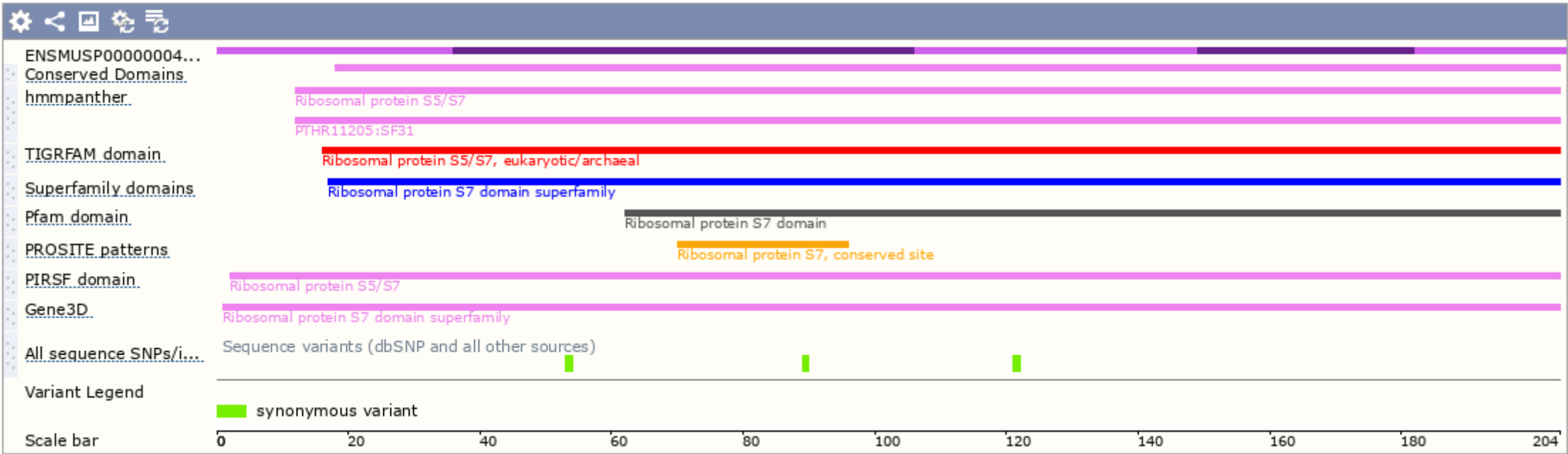
The strategy is based on the design of *Rps5-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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