

Rhoh Cas9-KO Strategy

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Project Overview

Project Name

Rhoh

Project type

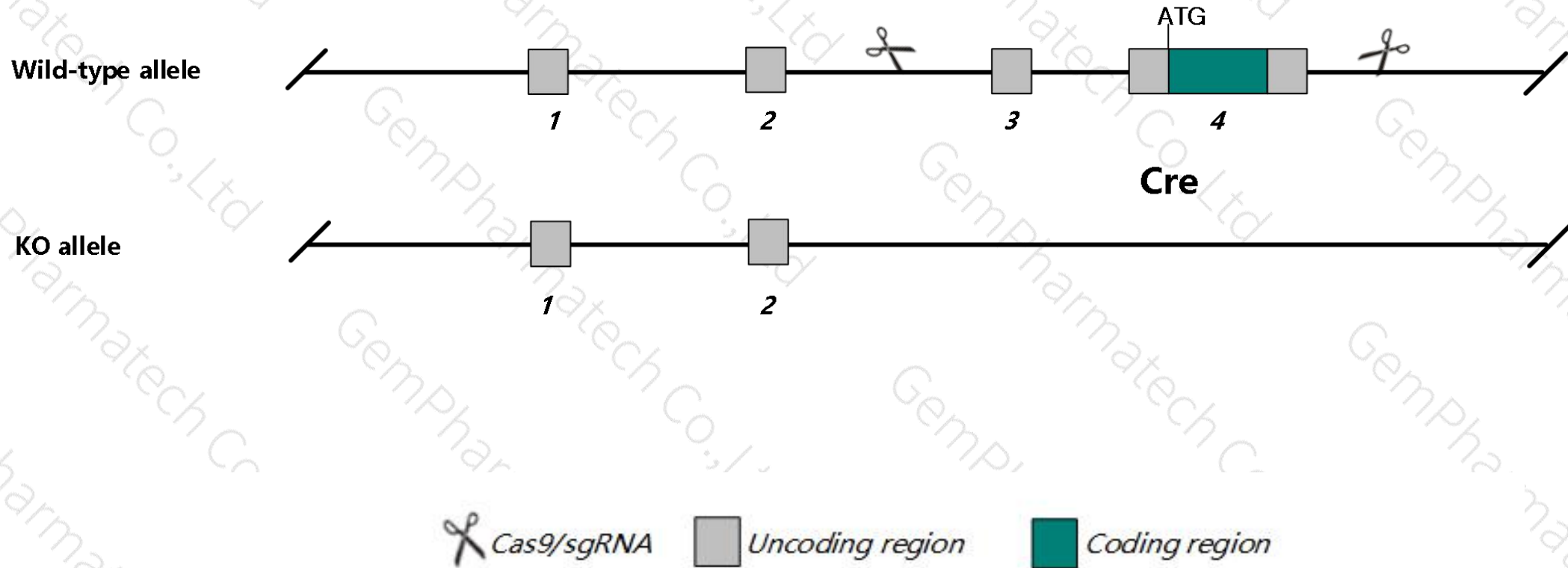
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Rhoh* gene has 4 transcripts. According to the structure of *Rhoh* gene, exon3-exon4 of *Rhoh-201* (ENSMUST00000031106.7) transcript is recommended as the knockout region. The region contains all 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 *Rhoh* gene. The brief process is as follows: CRISPR/Cas9 system v

- According to the existing MGI data, Mice homozygous for disruptions in this gene display abnormalities in the differentiation of T cells and mast cell physiology.
- The *Rhoh* gene is located on the Chr5. 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)

Rhoh ras homolog family member H [*Mus musculus* (house mouse)]

Gene ID: 74734, updated on 24-Oct-2019

Summary

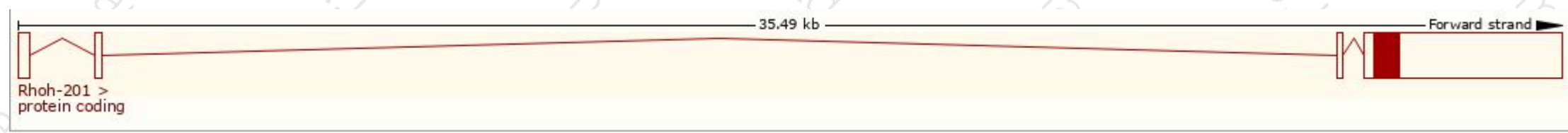
Official Symbol	Rhoh provided by MGI
Official Full Name	ras homolog family member H provided by MGI
Primary source	MGI:MGI:1921984
See related	Ensembl:ENSMUSG00000029204
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Arhh; AU019774; 5830400A04Rik
Expression	Biased expression in thymus adult (RPKM 18.6), spleen adult (RPKM 6.0) and 2 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

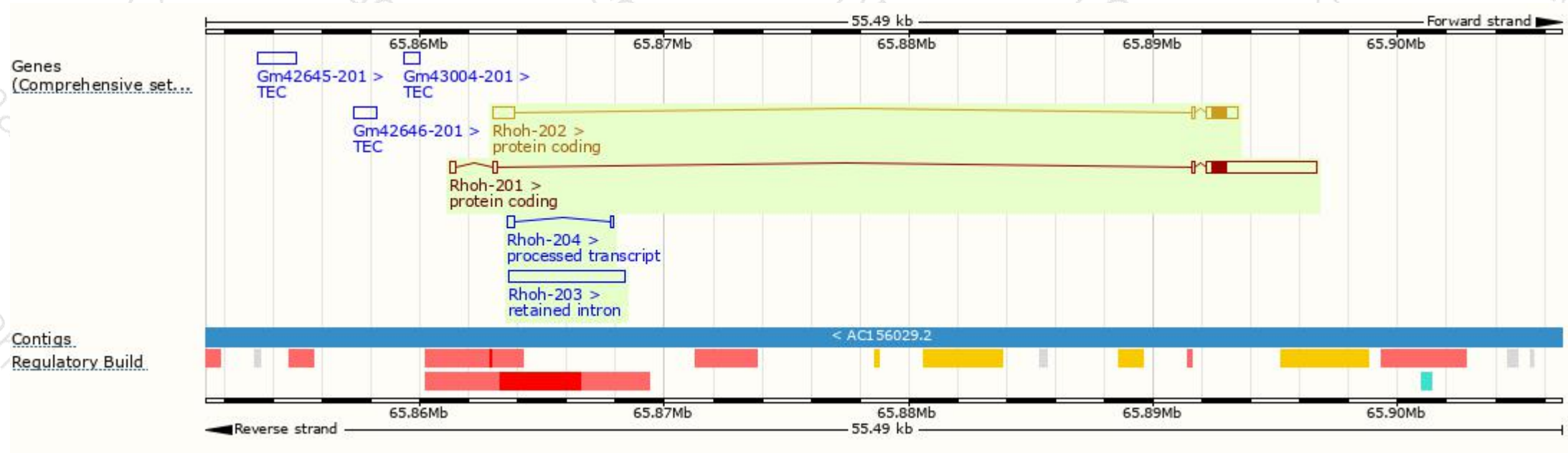
The gene has 4 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rhoh-201	ENSMUST00000031106.7	5093	191aa	Protein coding	CCDS39100	Q504M6 & Q9D3G9	TSL:1 Gencode basic APPRIS P1
Rhoh-202	ENSMUST000000201533.1	2265	191aa	Protein coding	CCDS39100	Q504M6 & Q9D3G9	TSL:1 Gencode basic APPRIS P1
Rhoh-204	ENSMUST000000202591.1	451	No protein	Processed transcript	-	-	TSL:3
Rhoh-203	ENSMUST000000202471.1	4781	No protein	Retained intron	-	-	TSL:NA

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



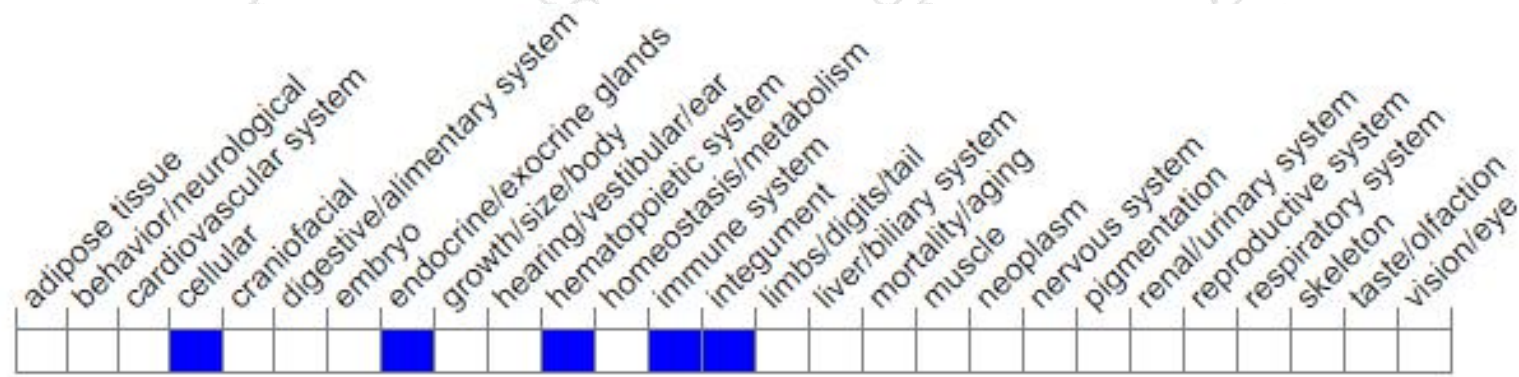
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

According to the existing MGI data, Mice homozygous for disruptions in this gene display abnormalities in the differentiation of T cells and mast cell physiology.

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

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