

***Rnf144a* Cas9-KO Strategy**

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Project Overview

Project Name

Rnf144a

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rnfl44a* gene. The schematic diagram is as follows:



- The *Rnfl144a* gene has 7 transcripts. According to the structure of *Rnfl144a* gene, exon5-exon6 of *Rnfl144a-201* (ENSMUST00000020971.13) transcript is recommended as the knockout region. The region contains 166bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rnfl144a* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Rnfl144a* gene is located on the Chr12. 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)

Rnf144a ring finger protein 144A [Mus musculus (house mouse)]

Gene ID: 108089, updated on 13-Mar-2020

Summary



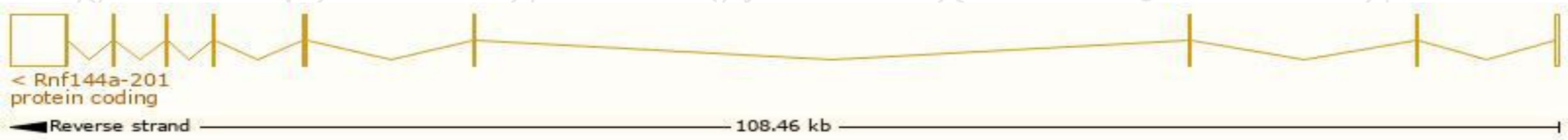
Official Symbol	Rnf144a provided by MGI
Official Full Name	ring finger protein 144A provided by MGI
Primary source	MGI:MGI:1344401
See related	Ensembl:ENSMUSG00000020642
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Rnf144, UIP4, Ubce7ip4
Expression	Broad expression in lung adult (RPKM 29.8), limb E14.5 (RPKM 11.1) and 17 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

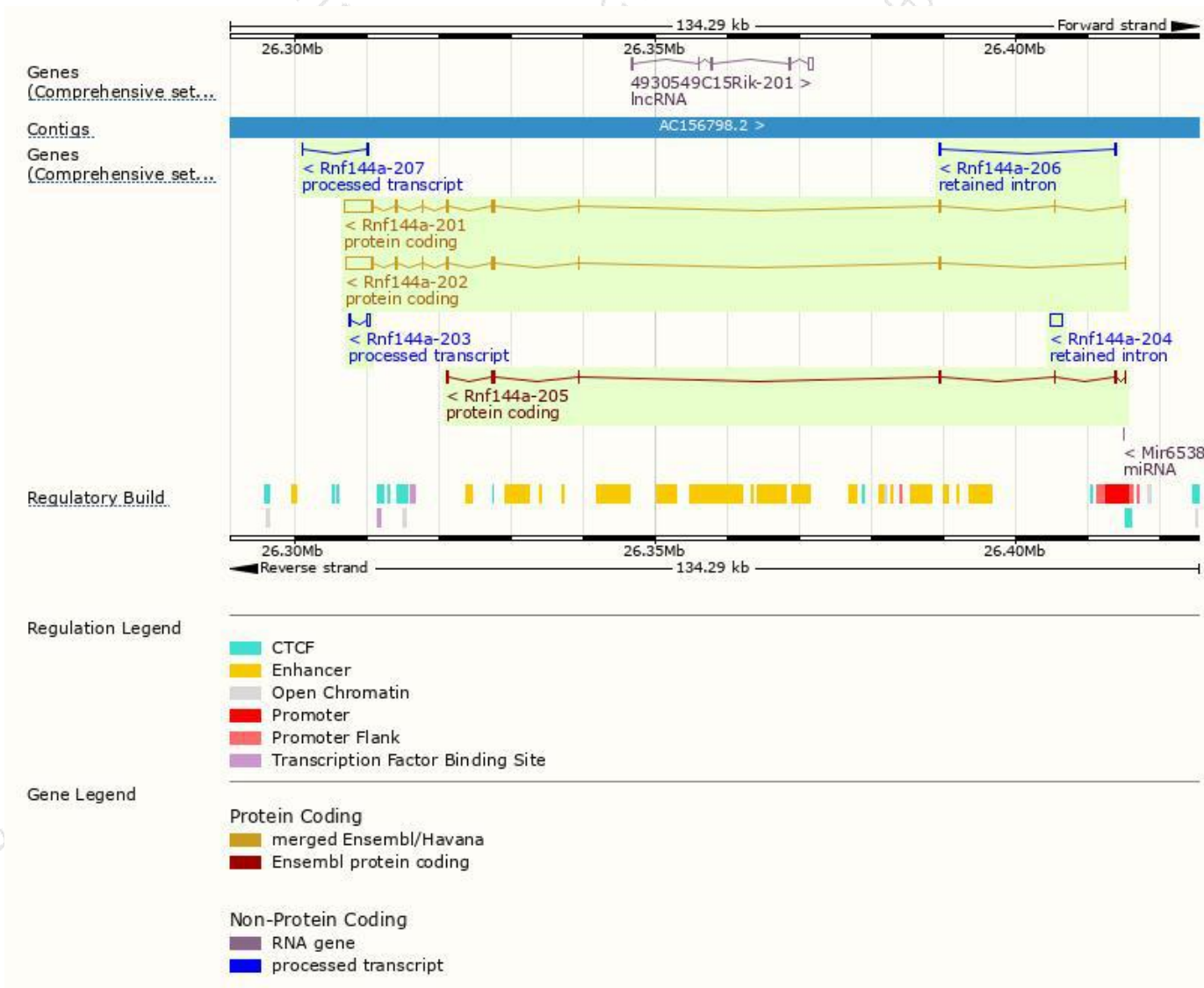
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rnf144a-201	ENSMUST00000020971.13	5164	292aa	Protein coding	CCDS36425	Q925F3	TSL:1 GENCODE basic APPRIS P1
Rnf144a-202	ENSMUST00000062149.5	4812	292aa	Protein coding	CCDS36425	Q925F3	TSL:1 GENCODE basic APPRIS P1
Rnf144a-205	ENSMUST00000222082.1	764	132aa	Protein coding	-	A0A1Y7VMM6	CDS 3' incomplete TSL:3
Rnf144a-203	ENSMUST00000220742.1	558	No protein	Processed transcript	-	-	TSL:3
Rnf144a-207	ENSMUST00000223137.1	343	No protein	Processed transcript	-	-	TSL:3
Rnf144a-204	ENSMUST00000221994.1	1757	No protein	Retained intron	-	-	TSL:NA
Rnf144a-206	ENSMUST00000222505.1	498	No protein	Retained intron	-	-	TSL:3

The strategy is based on the design of *Rnf144a-201* transcript,the transcription is shown below:



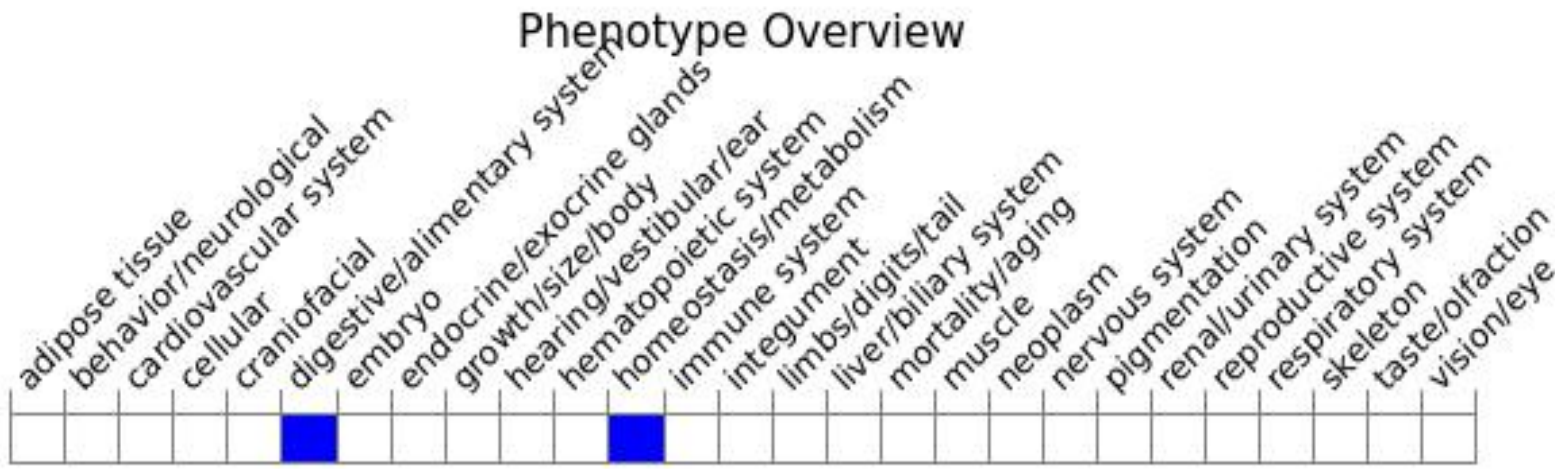
Genomic location distribution



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/>).

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

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