

Rfx8 Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Rfx8

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rfx8* gene. The schematic diagram is as follows:



- The *Rfx8* gene has 2 transcripts. According to the structure of *Rfx8* gene, exon2 of *Rfx8-202* (ENSMUST00000151913.2) transcript is recommended as the knockout region. The region contains 124bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rfx8* gene. The brief process is as follows: CRISPR/Cas9 system w

- The *Rfx8* gene is located on the Chr1. 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)

Rfx8 regulatory factor X 8 [*Mus musculus* (house mouse)]

Gene ID: 619289, updated on 12-Aug-2019

Summary

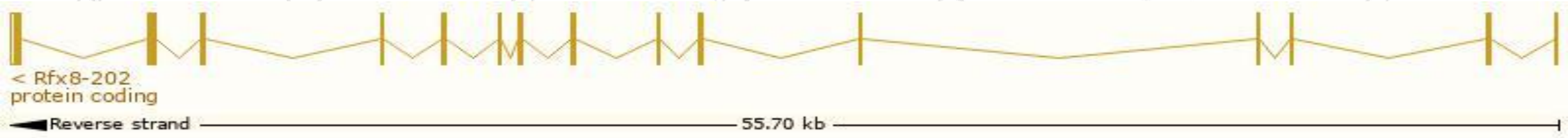
Official Symbol	Rfx8 provided by MGI
Official Full Name	regulatory factor X 8 provided by MGI
Primary source	MGI:MGI:3588206
See related	Ensembl:ENSMUSG000000057173
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4933400N17Rik
Expression	Restricted expression toward testis adult (RPKM 12.4) See more
Orthologs	human all

Transcript information (Ensembl)

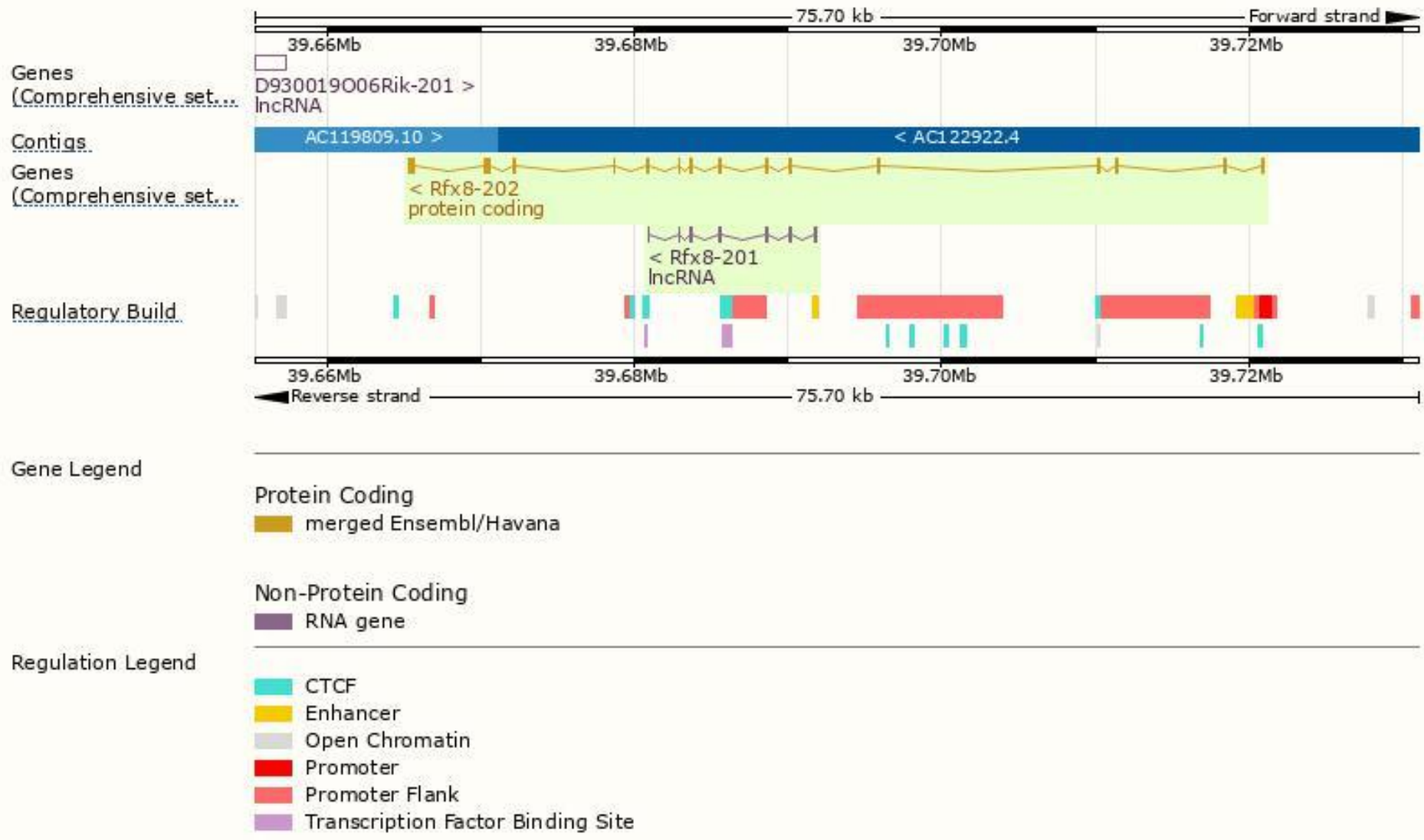
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rfx8-202	ENSMUST00000151913.2	2008	596aa	Protein coding	CCDS48245	D3YU81	TSL:1 GENCODE basic APPRIS P1
Rfx8-201	ENSMUST00000126760.1	711	No protein	lncRNA	-	-	TSL:3

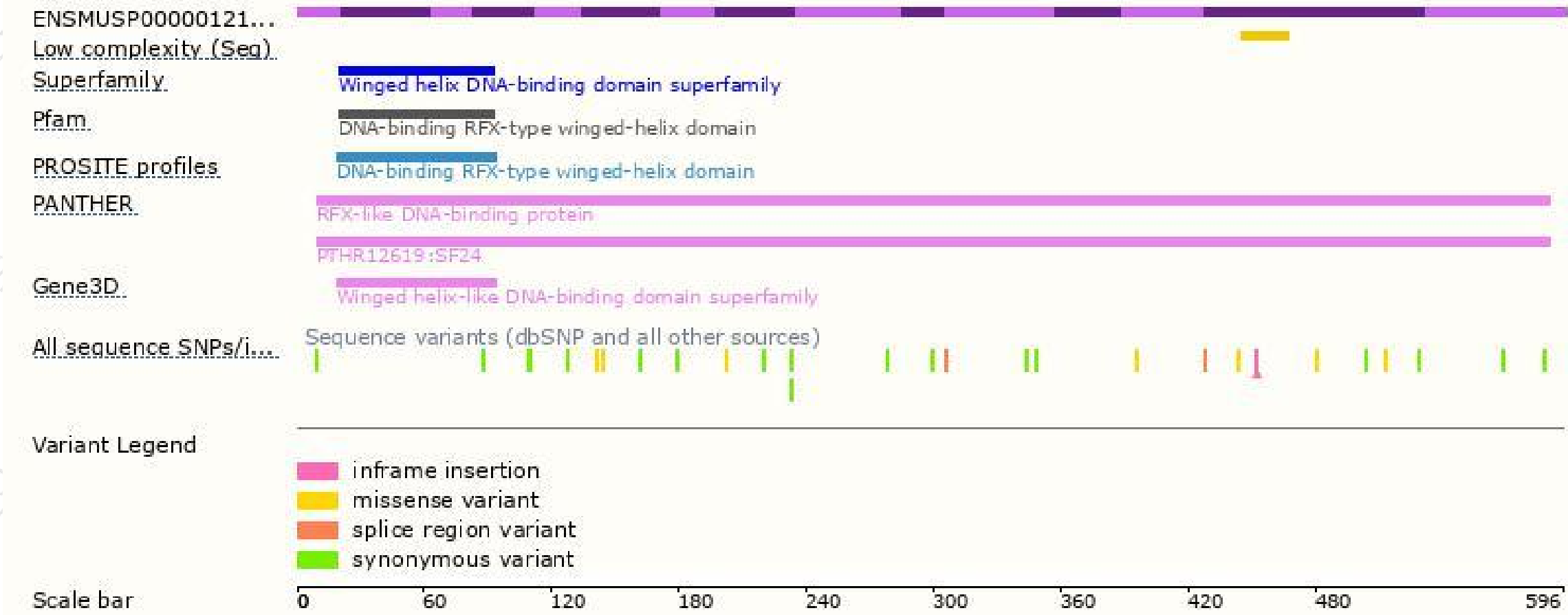
The strategy is based on the design of *Rfx8-202* transcript,The transcription is shown below



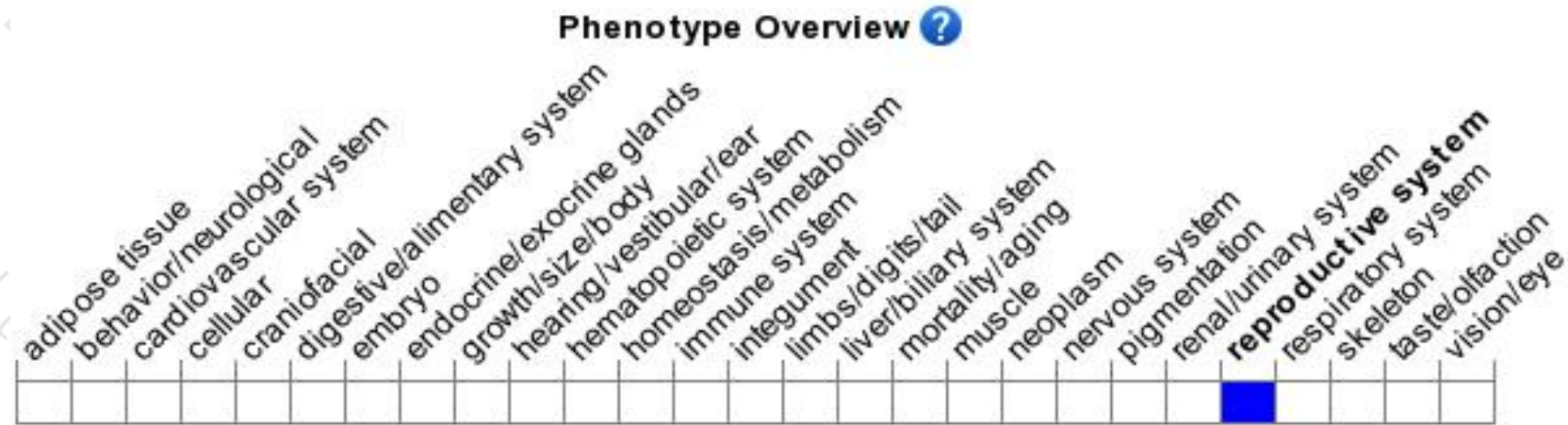
Genomic location distribution



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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