

*Rx*fp3 Cas9-KO Strategy

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Project Overview

Project Name

Rxfp3

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rxfp3* gene. The schematic diagram is as follows:



- The *Rxfp3* gene has 1 transcript. According to the structure of *Rxfp3* gene, exon1 of *Rxfp3-201* (ENSMUST00000058007.6) 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 *Rxfp3* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a null mutation display a subtle decrease in anxiety related behaviors and hypoactivity in their home cages.
- The *Rxfp3* gene is located on the Chr15. 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)

Rxfp3 relaxin family peptide receptor 3 [Mus musculus (house mouse)]

Gene ID: 239336, updated on 19-Mar-2019

Summary



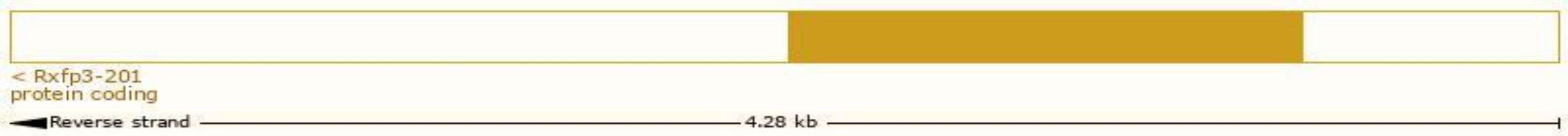
Official Symbol	Rxfp3 provided by MGI
Official Full Name	relaxin family peptide receptor 3 provided by MGI
Primary source	MGI:MGI:2441827
See related	Ensembl:ENSMUSG00000060735
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	BC053073, GPCR135, Rln3r1, Salpr
Orthologs	human all

Transcript information (Ensembl)

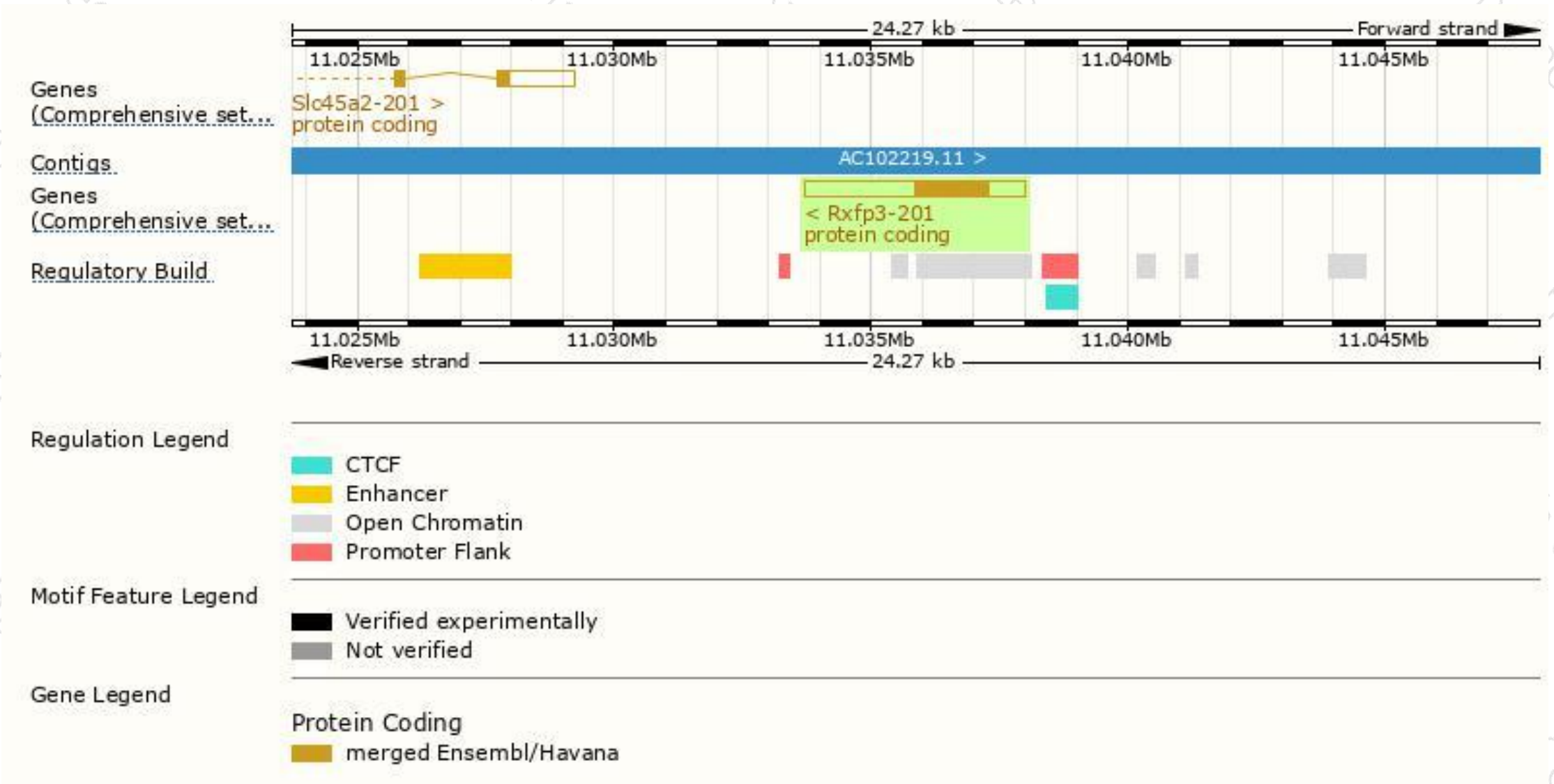
The gene has 1 transcript,and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rxfp3-201	ENSMUST00000058007.6	4275	472aa	Protein coding	CCDS27383	Q5Y988 Q8BGE9	TSL:NA GENCODE basic APPRIS P1

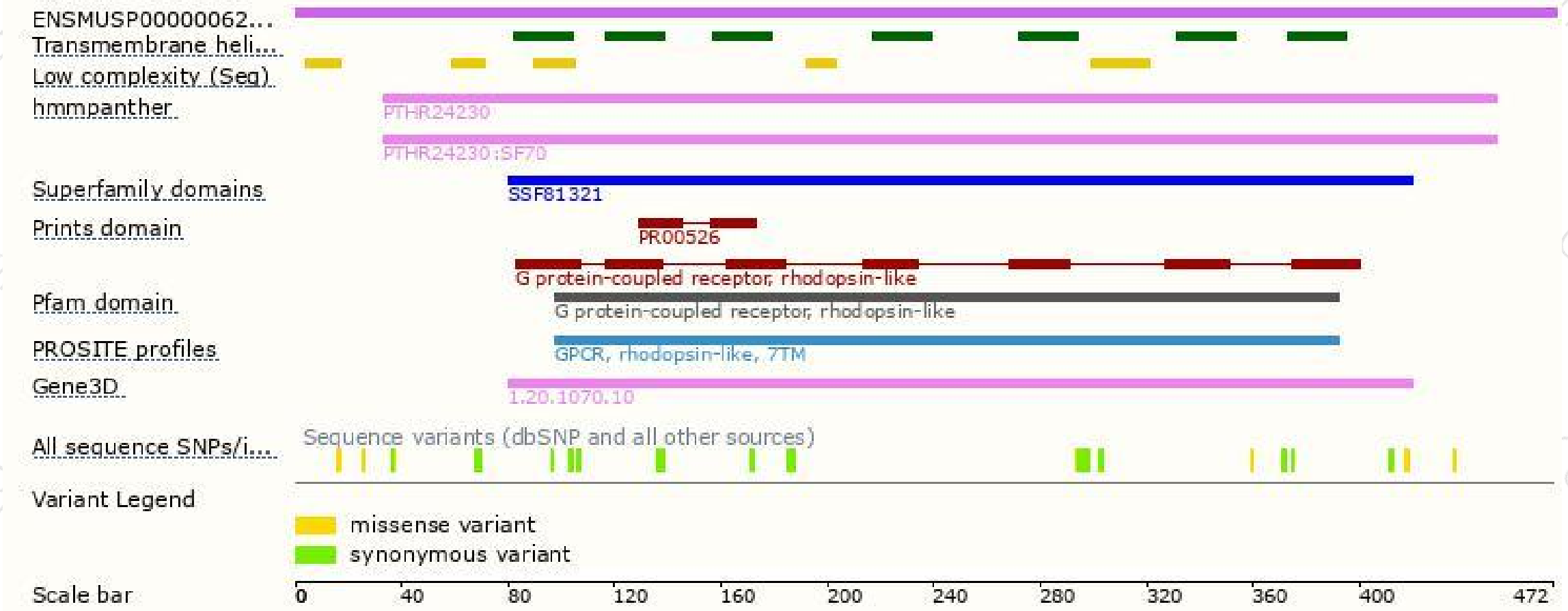
The strategy is based on the design of *Rxfp3-201* transcript,The transcription is shown below



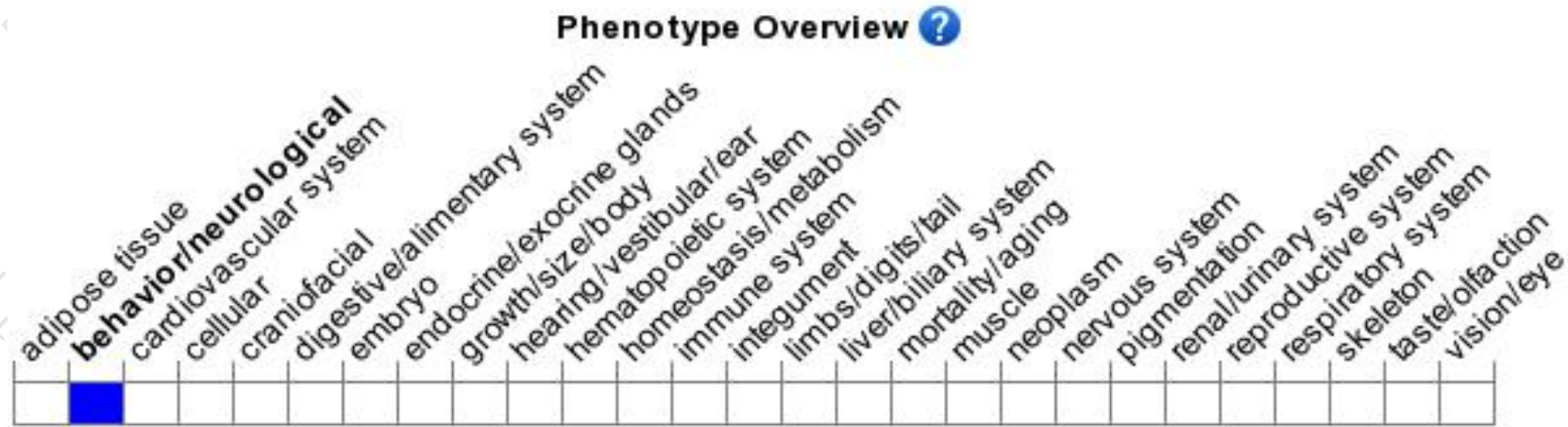
Genomic location distribution



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 a null mutation display a subtle decrease in anxiety related behaviors and hypoactivity in their home cages.

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

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