

Rpn2 Cas9-KO Strategy

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Project Overview

Project Name

Rpn2

Project type

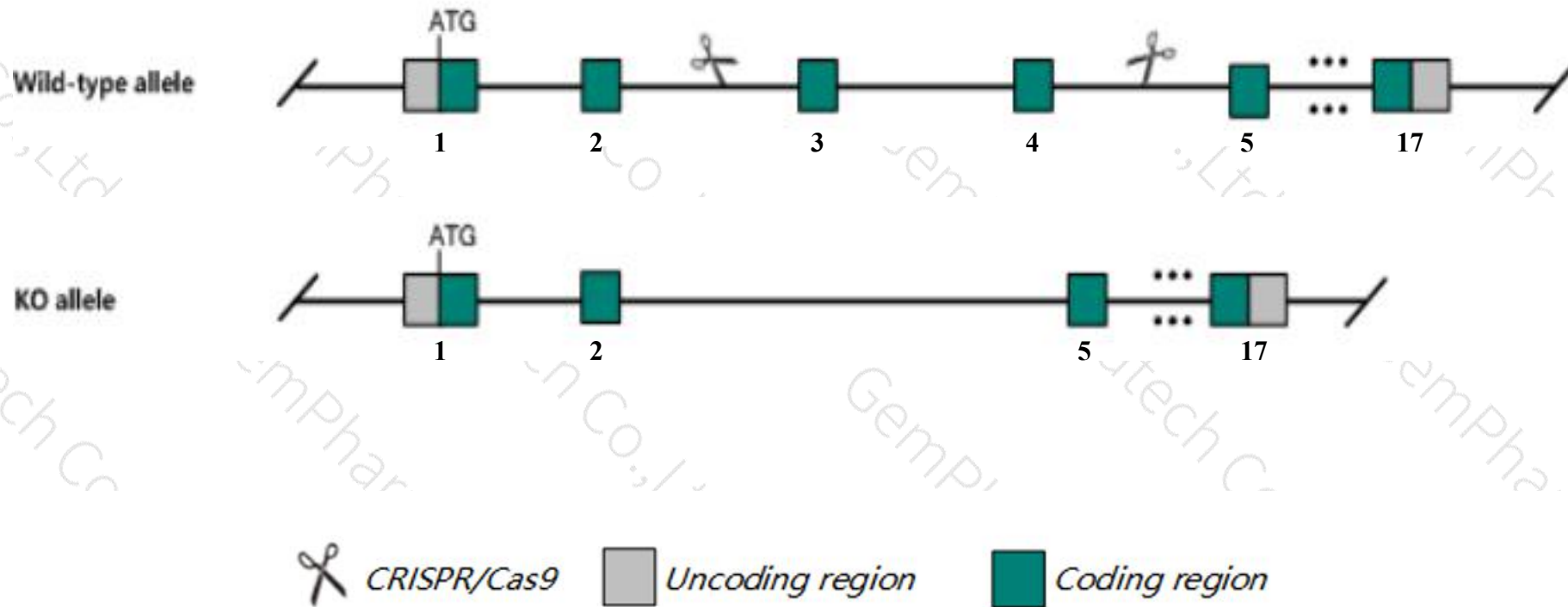
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rpn2* gene. The schematic diagram is as follows:



- The *Rpn2* gene has 11 transcripts. According to the structure of *Rpn2* gene, exon3-exon4 of *Rpn2-202* (ENSMUST00000116380.8) transcript is recommended as the knockout region. The region contains 272bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rpn2* gene. The brief process is as follows: CRISPR/Cas9 system v

- The *Rpn2* gene is located on the Chr2. 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)

Rpn2 ribophorin II [*Mus musculus* (house mouse)]

Gene ID: 20014, updated on 29-Mar-2020

Summary

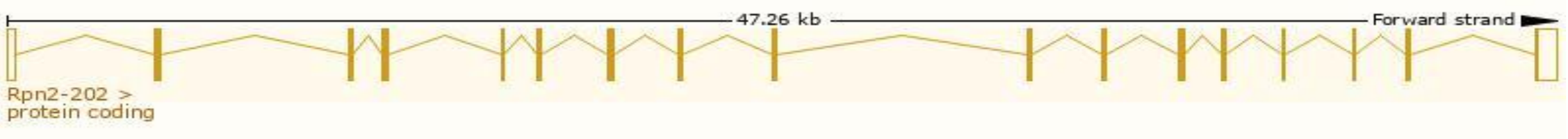
Official Symbol	Rpn2 provided by MGI
Official Full Name	ribophorin II provided by MGI
Primary source	MGI:MGI:98085
See related	Ensembl:ENSMUSG00000027642
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Rpn-2; AV261018; 1300012C06Rik
Expression	Ubiquitous expression in placenta adult (RPKM 112.6), genital fat pad adult (RPKM 107.4) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

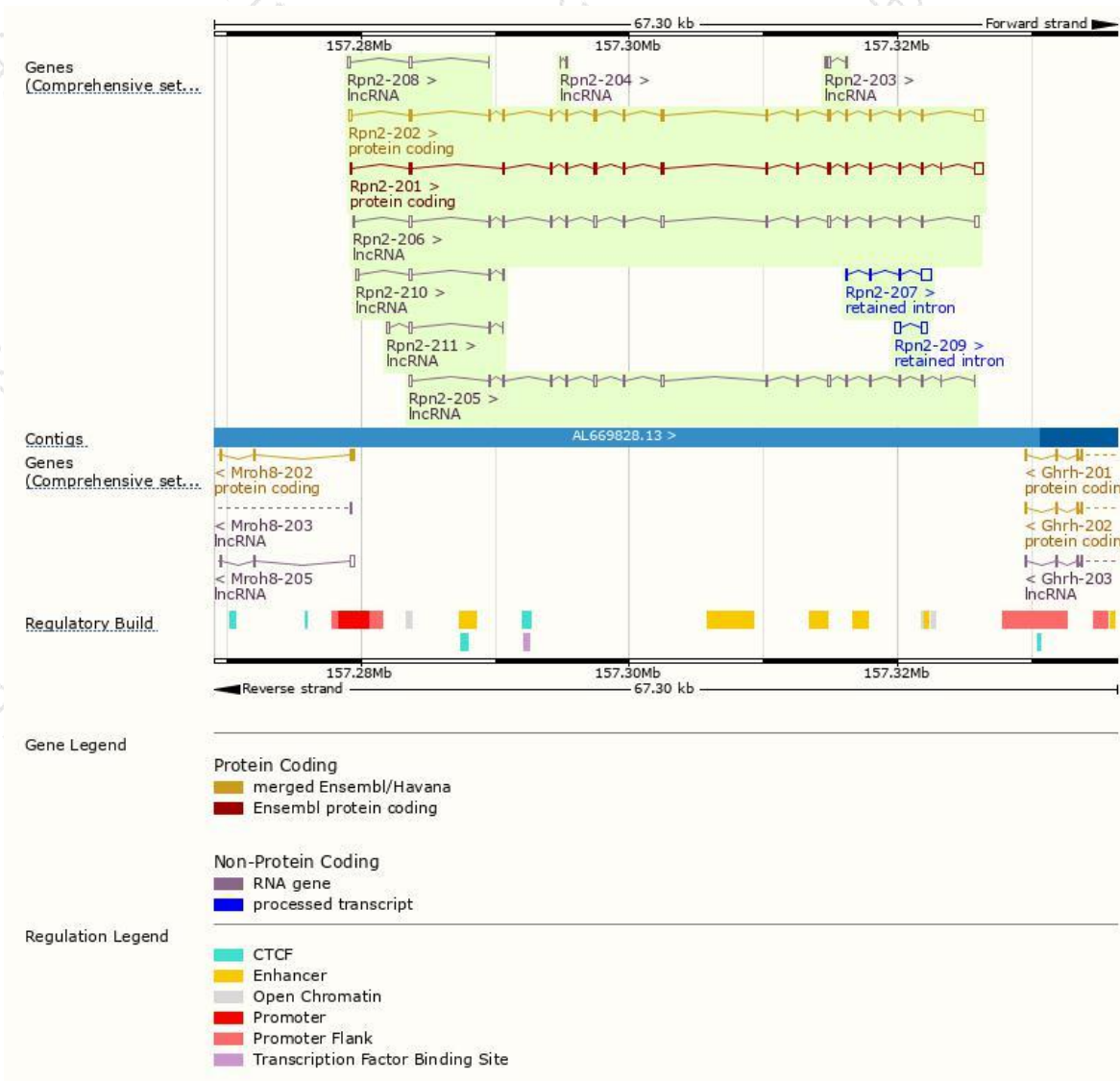
The gene has 11 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rpn2-202	ENSMUST00000116380.8	2756	631aa	Protein coding	CCDS16975	Q9DBG6	TSL:1 GENCODE basic APPRIS P1
Rpn2-201	ENSMUST00000029171.5	2621	615aa	Protein coding	-	A2ACG7	TSL:5 GENCODE basic
Rpn2-206	ENSMUST00000127252.7	2314	No protein	Processed transcript	-	-	TSL:1
Rpn2-205	ENSMUST00000126248.7	1944	No protein	Processed transcript	-	-	TSL:5
Rpn2-210	ENSMUST00000150349.7	670	No protein	Processed transcript	-	-	TSL:5
Rpn2-211	ENSMUST00000156007.7	565	No protein	Processed transcript	-	-	TSL:5
Rpn2-208	ENSMUST00000142463.7	424	No protein	Processed transcript	-	-	TSL:3
Rpn2-203	ENSMUST00000123639.1	366	No protein	Processed transcript	-	-	TSL:3
Rpn2-204	ENSMUST00000125311.1	139	No protein	Processed transcript	-	-	TSL:5
Rpn2-207	ENSMUST00000141934.1	934	No protein	Retained intron	-	-	TSL:2
Rpn2-209	ENSMUST00000149924.1	832	No protein	Retained intron	-	-	TSL:2

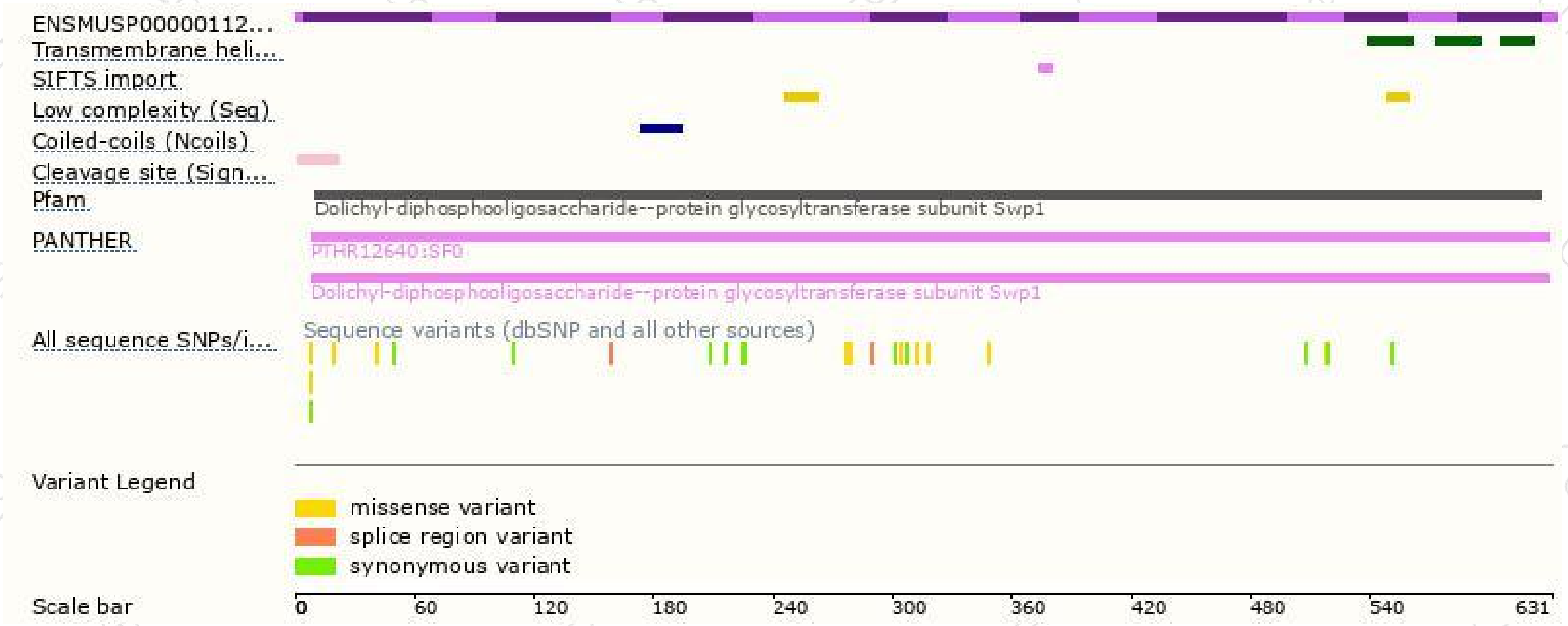
The strategy is based on the design of *Rpn2-202* transcript,The transcription is shown below



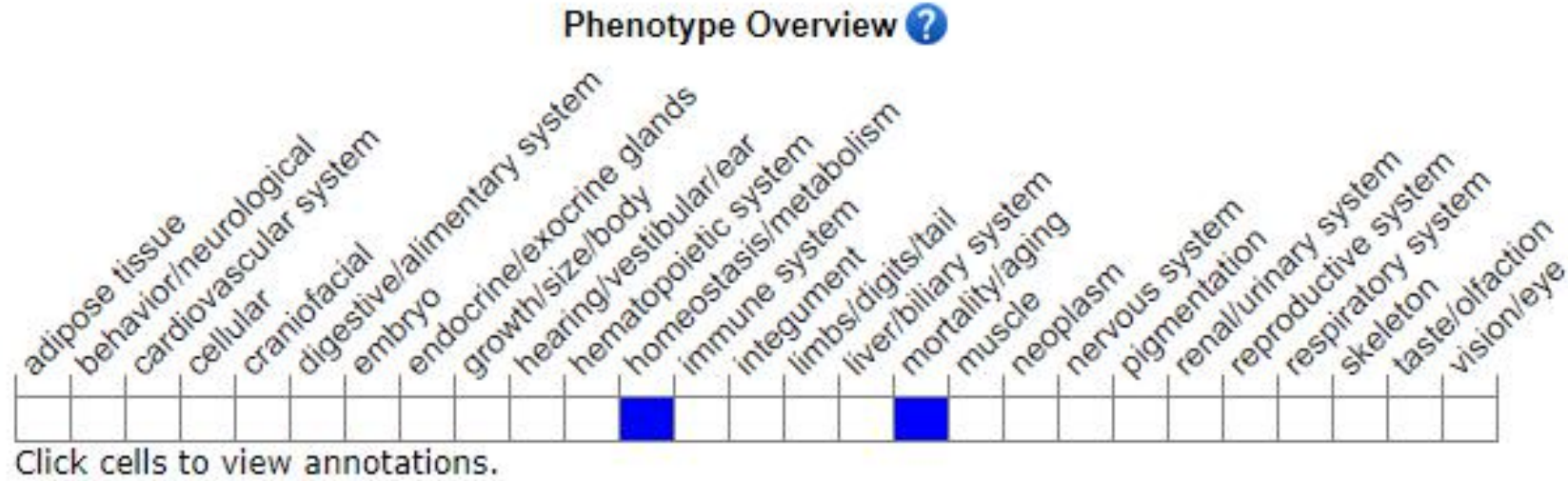
Genomic location distribution



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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