

Ppp1r1a Cas9-KO Strategy

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Project Overview

Project Name

Ppp1r1a

Project type

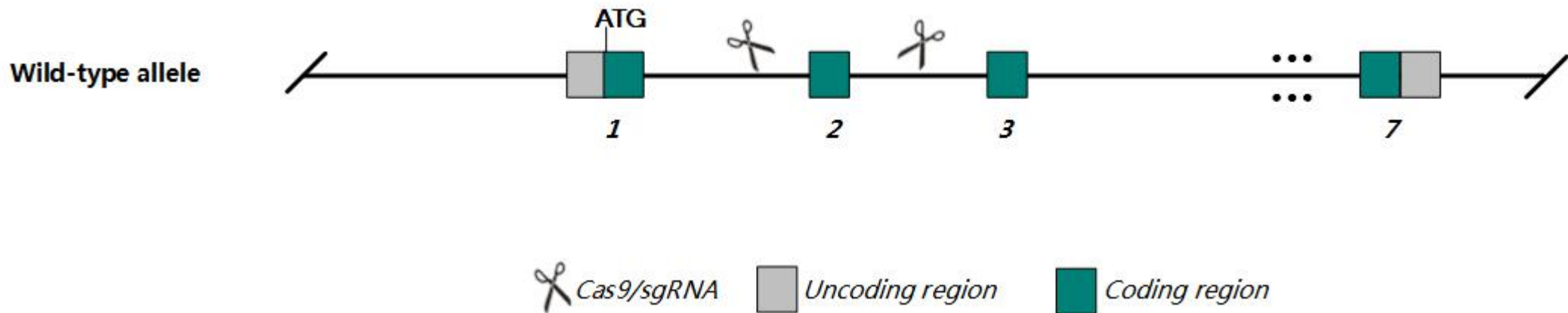
Cas9-KO

Strain background

C57BL/6N

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ppp1r1a* gene. The schematic diagram is as follows:



- In this project we use CRISPR/Cas9 technology to modify *Ppp1r1a* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6N mice. Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6N mice.

- According to MGI, Homozygous mutant mice show decreased long term potentiation, but normal performance in water maze tests.
- The *Ppp1r1a* 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)

Ppp1r1a protein phosphatase 1, regulatory inhibitor subunit 1A [*Mus musculus* (house mouse)]

Gene ID: 58200, updated on 13-Aug-2019

Summary

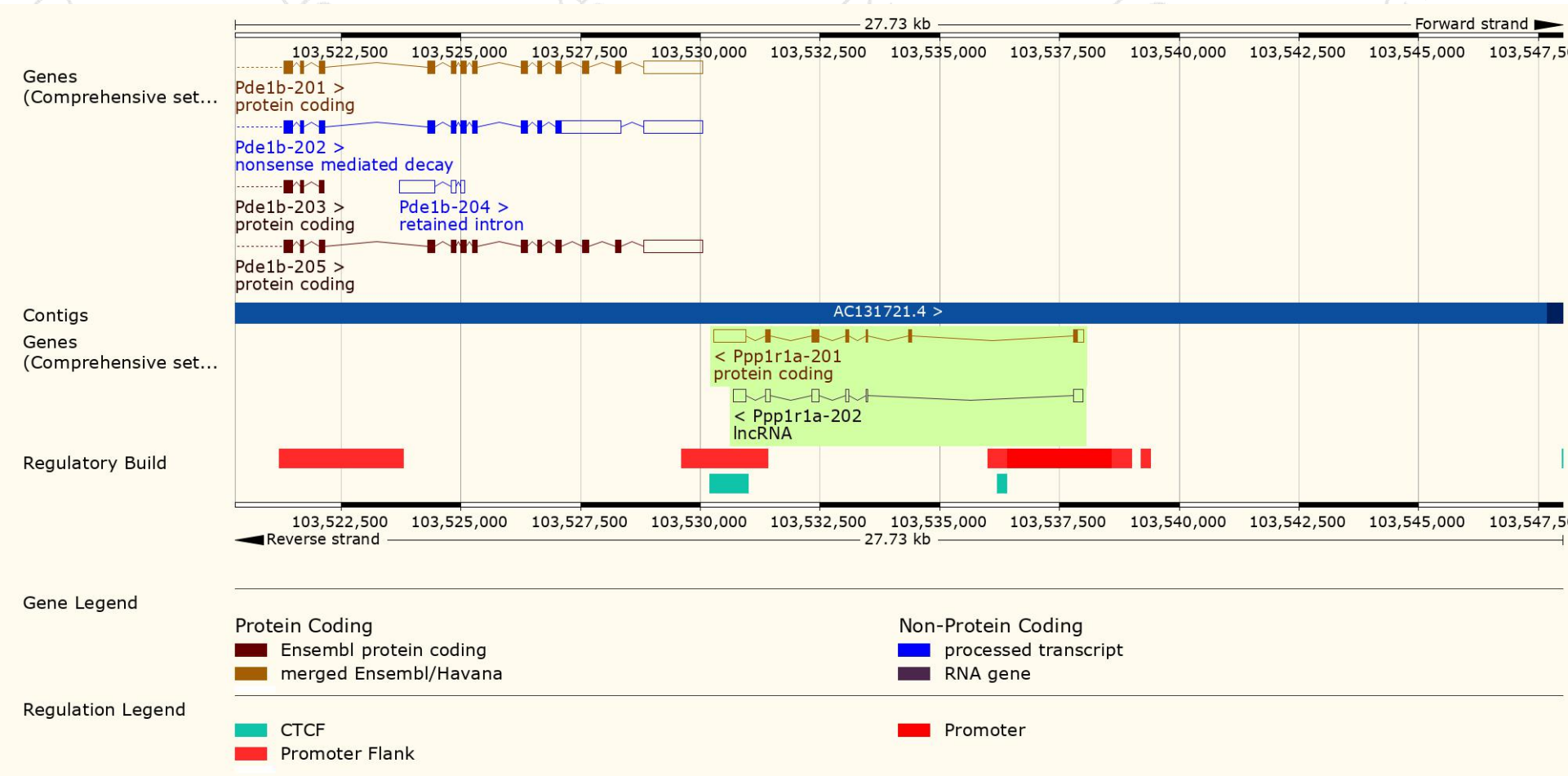
Official Symbol	Ppp1r1a provided by MGI
Official Full Name	protein phosphatase 1, regulatory inhibitor subunit 1A provided by MGI
Primary source	MGI:MGI:1889595
See related	Ensembl:ENSMUSG00000022490
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	I-1; 0610038N18Rik
Expression	Biased expression in kidney adult (RPKM 53.9), mammary gland adult (RPKM 24.9) and 11 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

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

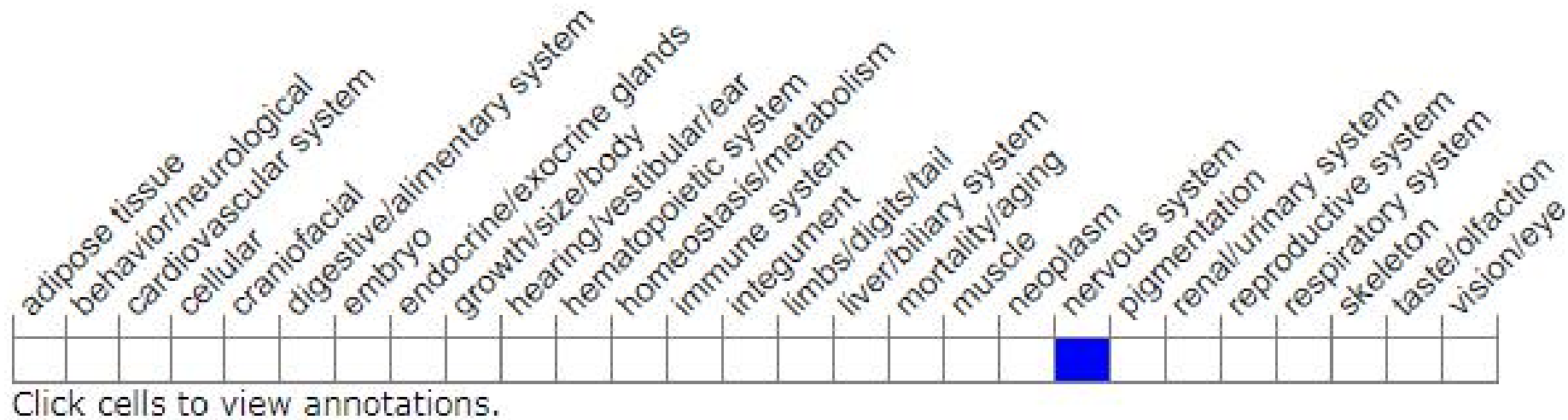
Name ▲	Transcript ID ▲	bp ▲	Protein ▲	Biotype ▲	CCDS ▲	UniProt ▲	Flags ▲
Ppp1r1a-201	ENSMUST00000023133.7	1306	171aa	Protein coding	CCDS37237	Q9ERT9	TSL:1 GENCODE basic APPRIS P1
Ppp1r1a-202	ENSMUST000000228813.1	821	No protein	lncRNA	-	-	-

Genomic location distribution



Mouse phenotype description(MGI)

Phenotype Overview ?



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

Homozygous mutant mice show decreased long term potentiation, but normal performance in water maze tests.

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

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