

Pde11a Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Pdella

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Pdella* gene has 3 transcripts. According to the structure of *Pdella* gene, exon4-exon5 of *Pdella*-201 (ENSMUST00000099992.9) transcript is recommended as the knockout region. The region contains 206bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pdella* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a null allele have enlarged lateral ventricles and exhibit abnormal behavior.
- Transcript *Pdella-202* may not be affected.
- The *Pdella* 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)

Pde11a phosphodiesterase 11A [Mus musculus (house mouse)]

Gene ID: 241489, updated on 19-Feb-2019

Summary



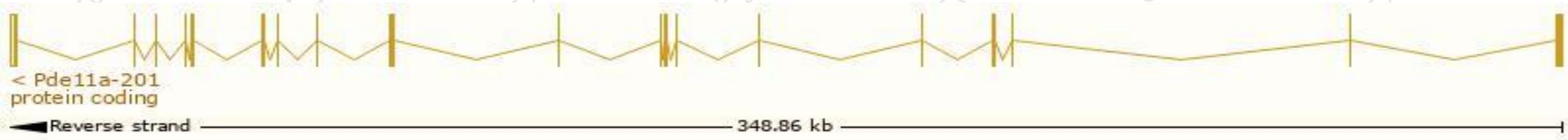
Official Symbol	Pde11a provided by MGI
Official Full Name	phosphodiesterase 11A provided by MGI
Primary source	MGI:MGI:3036251
See related	Ensembl:ENSMUSG00000075270
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	6330414F14Rik, A630086N24Rik, Gm350, PDE11A1
Expression	Low expression observed in reference dataset See more
Orthologs	human all

Transcript information (Ensembl)

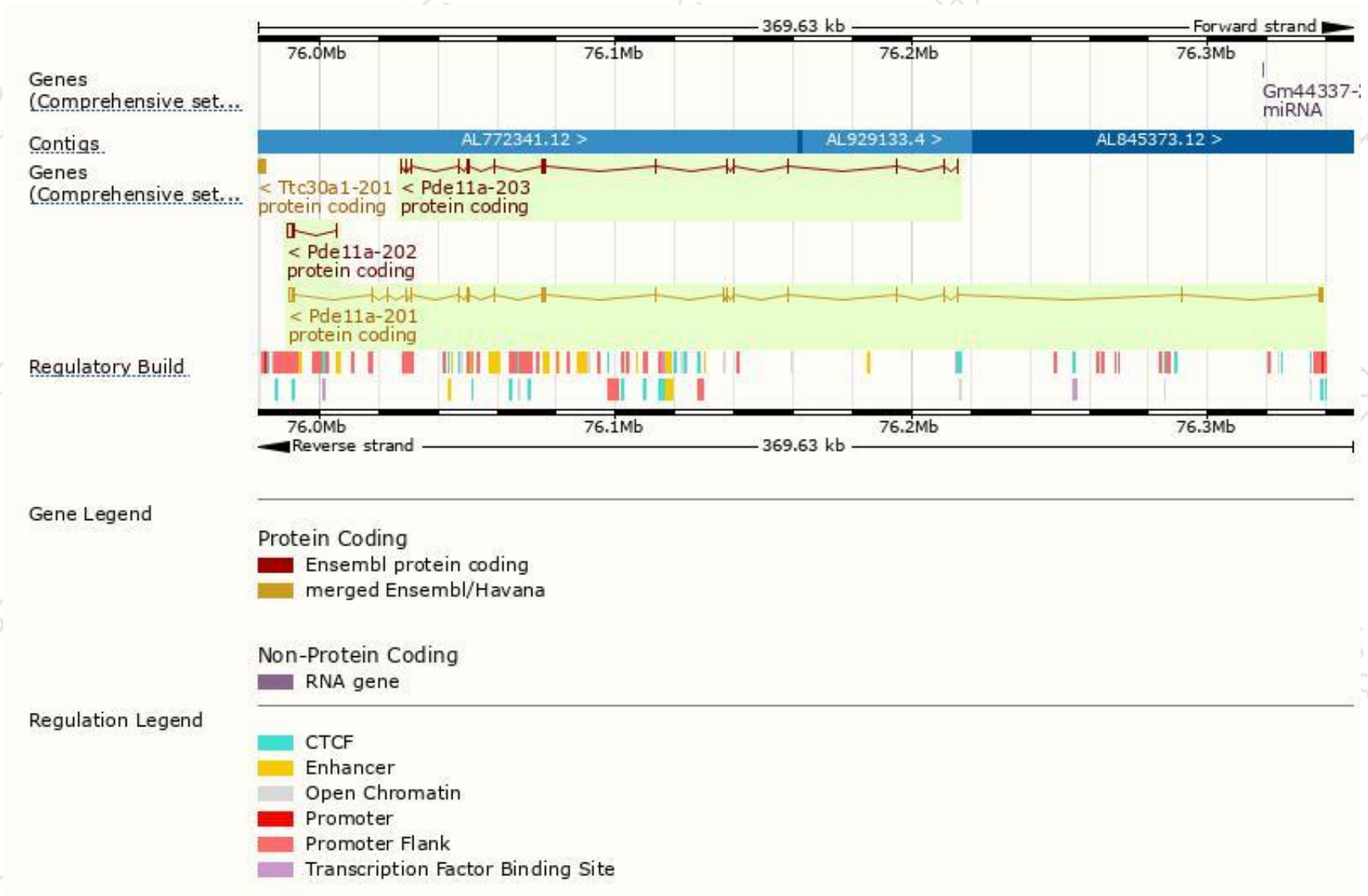
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pde11a-201	ENSMUST00000099992.9	4189	933aa	Protein coding	CCDS38152	P0C1Q2	TSL:1 GENCODE basic APPRIS P1
Pde11a-202	ENSMUST00000124825.1	2209	72aa	Protein coding	-	F7AAG1	CDS 5' incomplete TSL:1
Pde11a-203	ENSMUST00000144892.1	1496	444aa	Protein coding	-	F6SXR7	CDS 5' incomplete TSL:1

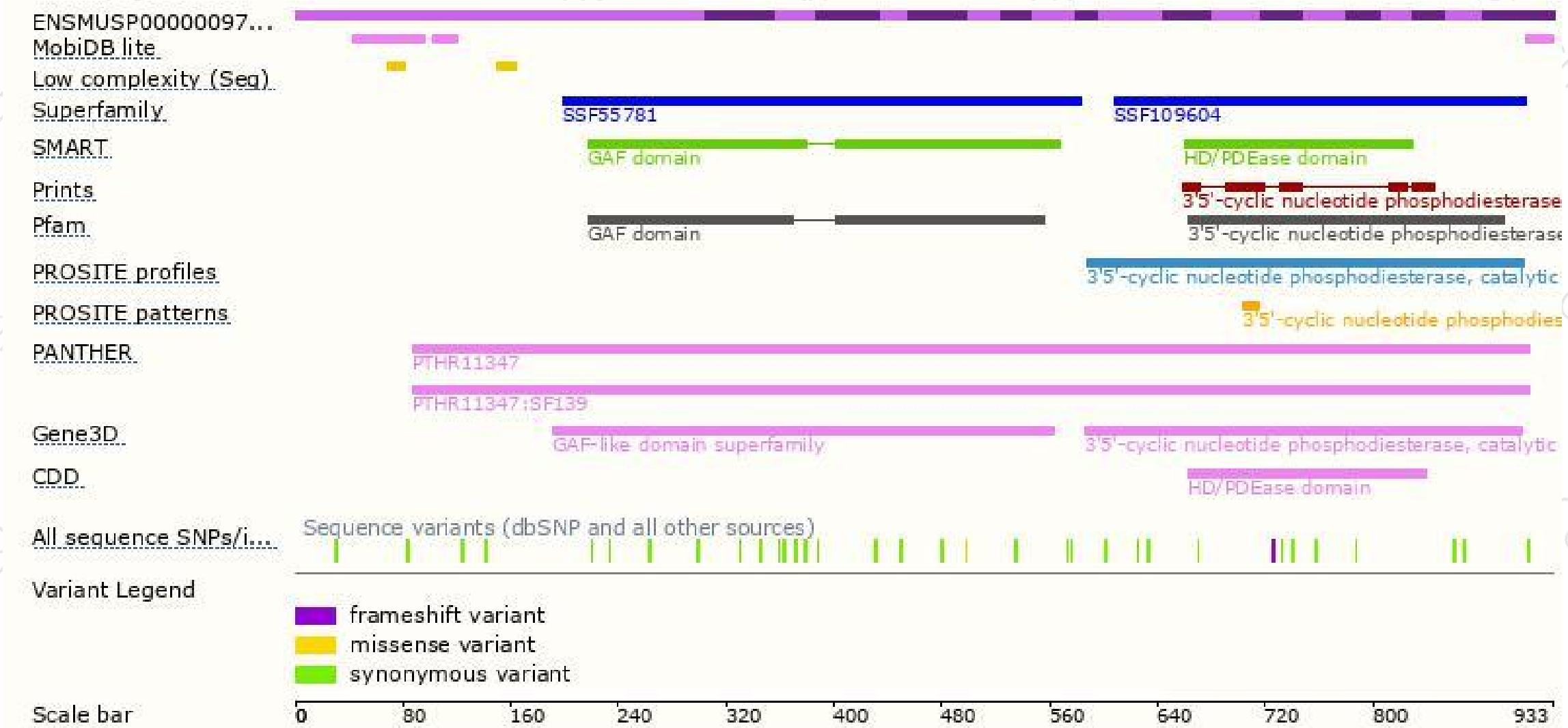
The strategy is based on the design of *Pde11a-201* transcript,The transcription is shown below



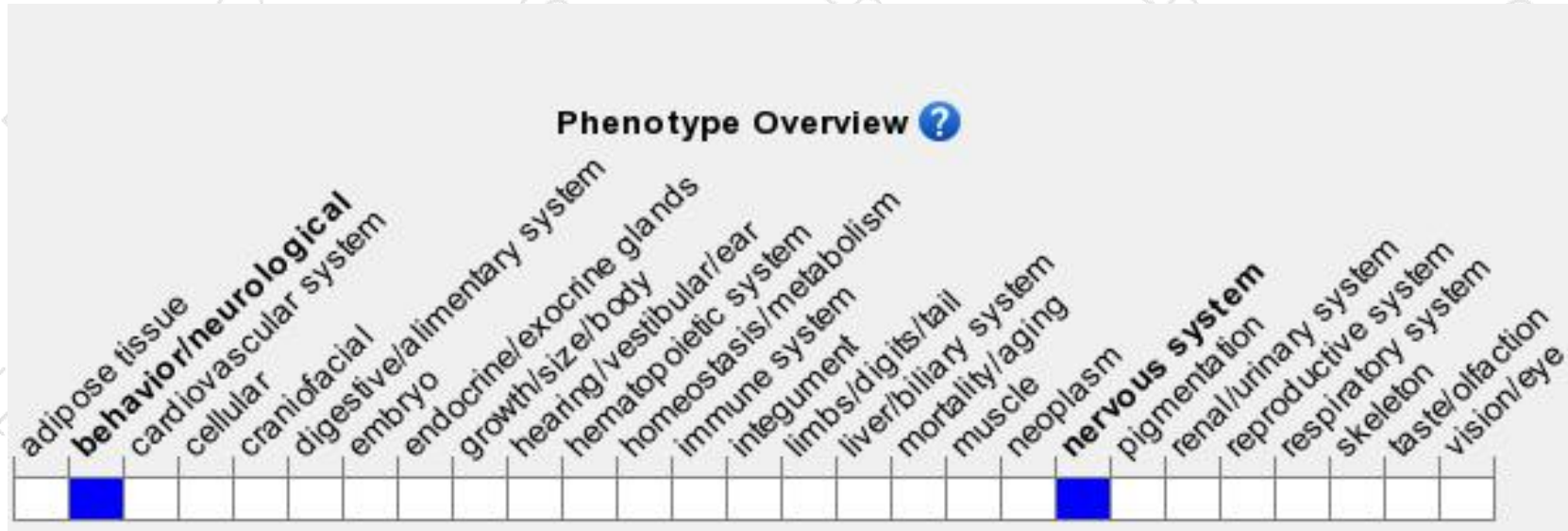
Genomic location distribution



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 allele have enlarged lateral ventricles and exhibit abnormal behavior.

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

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