

Pde6c Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Pde6c

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pde6c* gene. The schematic diagram is as follows:



- The *Pde6c* gene has 2 transcripts. According to the structure of *Pde6c* gene, exon2-exon14 of *Pde6c*-202 (ENSMUST00000112329.2) transcript is recommended as the knockout region. The region contains 1367bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pde6c* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, A spontaneous mutation in this gene results in abnormal cone photoreceptor function.
- The *Pde6c* gene is located on the Chr19. 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)

Pde6c phosphodiesterase 6C, cGMP specific, cone, alpha prime [Mus musculus (house mouse)]

Gene ID: 110855, updated on 31-Jan-2019

Summary



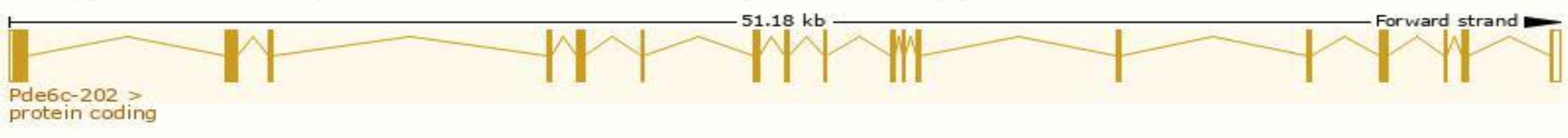
Official Symbol	Pde6c provided by MGI
Official Full Name	phosphodiesterase 6C, cGMP specific, cone, alpha prime provided by MGI
Primary source	MGI:MGI:105956
See related	Ensembl:ENSMUSG00000024992
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	cpfl1
Expression	Biased expression in liver E18 (RPKM 5.7), placenta adult (RPKM 4.9) and 2 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

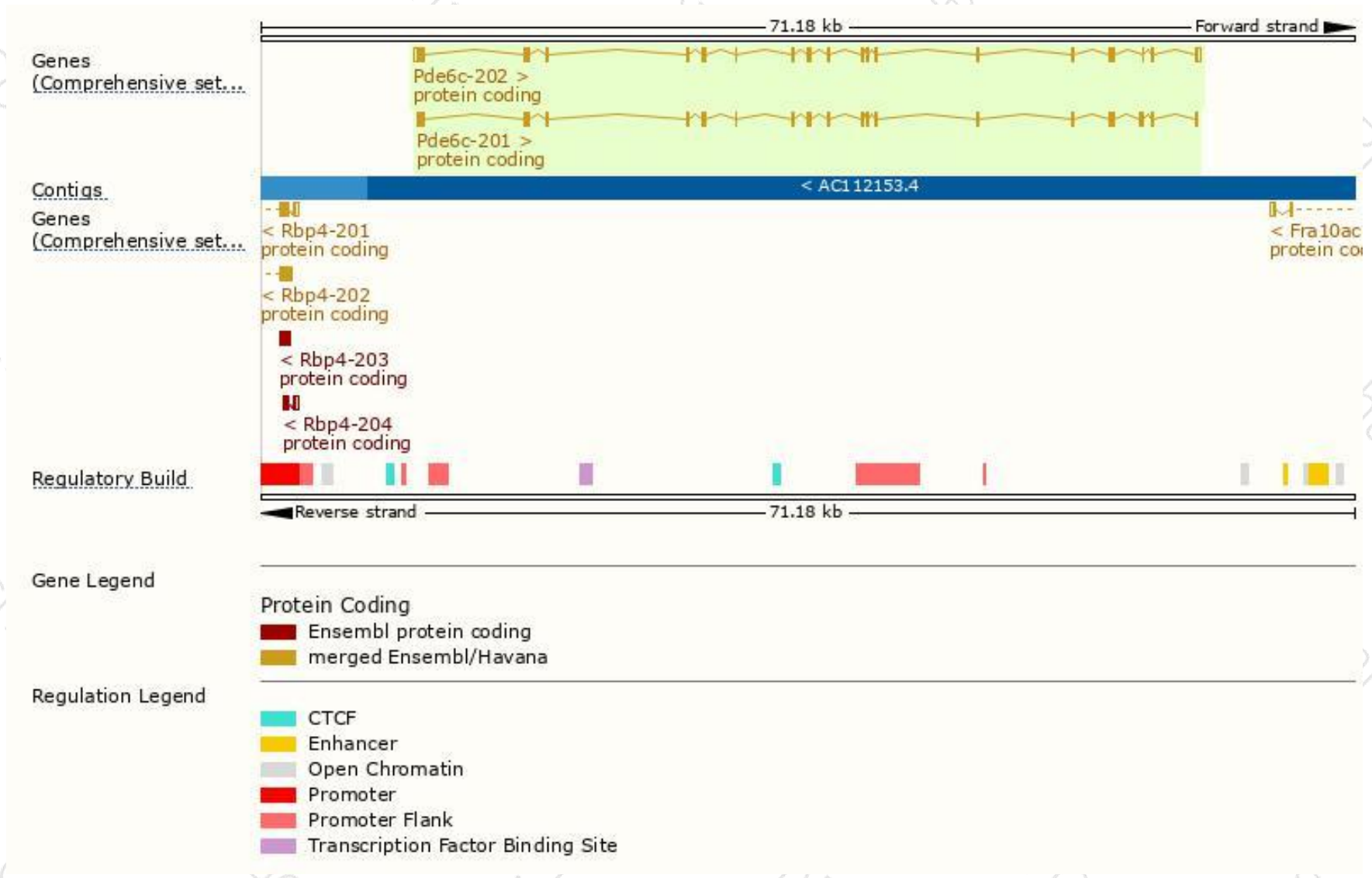
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pde6c-202	ENSMUST00000112329.2	2895	836aa	Protein coding	CCDS50431	Q91ZQ1	TSL:1 GENCODE basic
Pde6c-201	ENSMUST00000025956.12	2586	861aa	Protein coding	CCDS37971	Q91ZQ1	TSL:1 GENCODE basic APPRIS P1

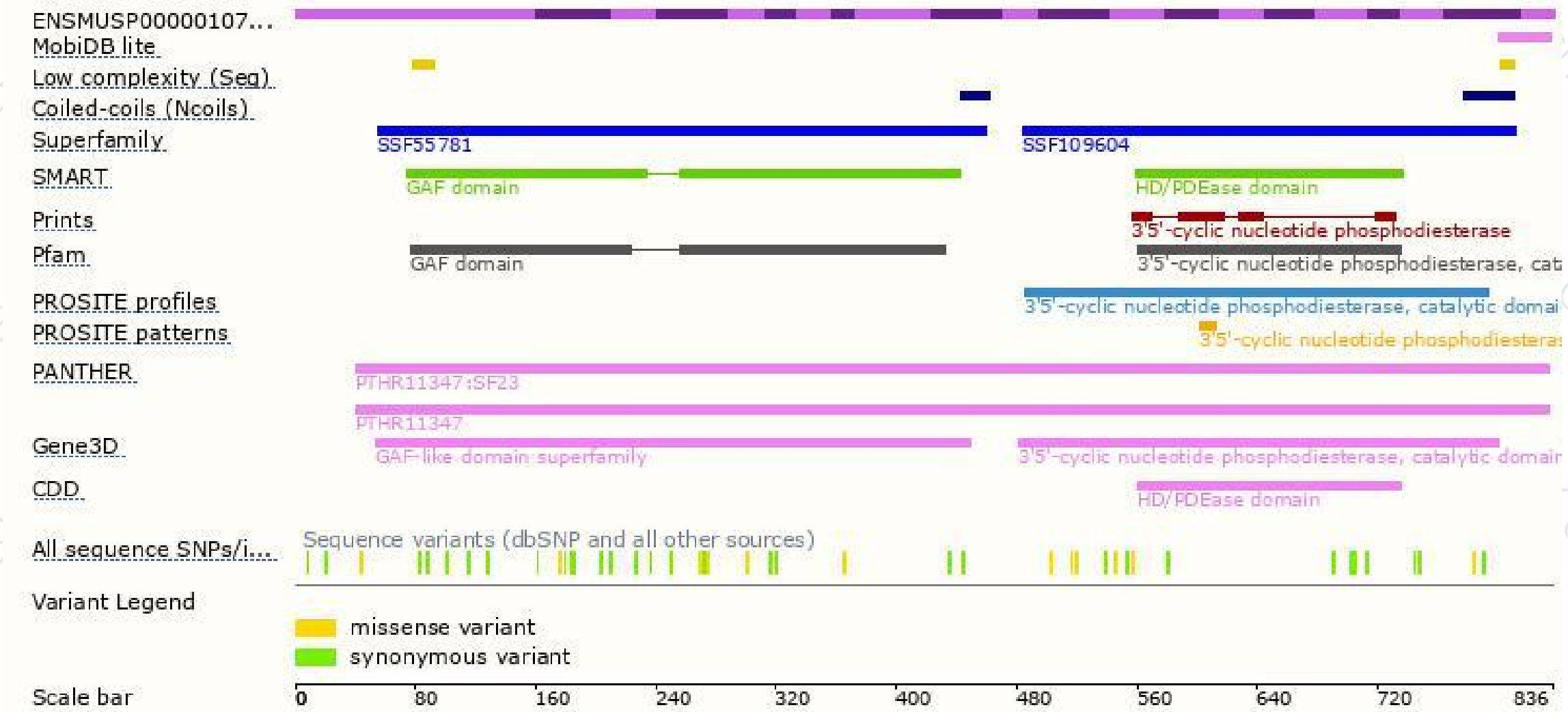
The strategy is based on the design of *Pde6c-202* transcript,The transcription is shown below



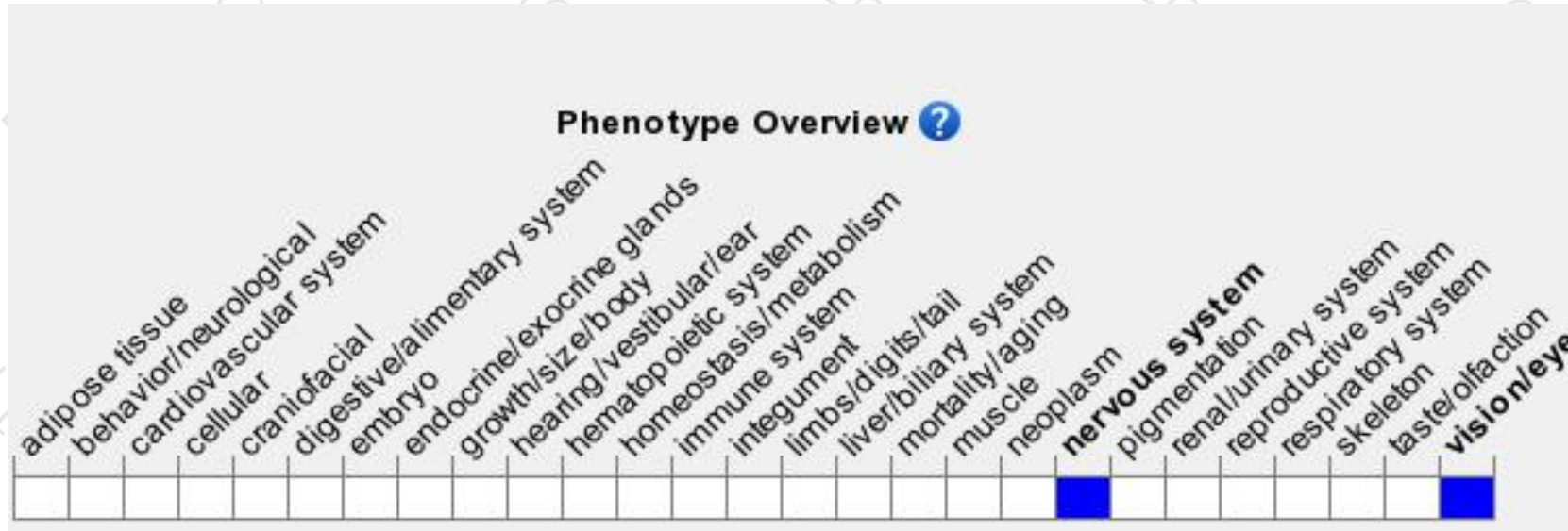
Genomic location distribution



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/>).

According to the existing MGI data, A spontaneous mutation in this gene results in abnormal cone photoreceptor function.

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

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