

Pitpnm1 Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Pitpnm1

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pitpnm1* gene. The schematic diagram is as follows:



- The *Pitpnm1* gene has 13 transcripts. According to the structure of *Pitpnm1* gene, exon2-exon13 of *Pitpnm1*-202 (ENSMUST00000100022.3) transcript is recommended as the knockout region. The region contains 2065bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pitpnm1* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a knock-out allele exhibit male-specific decrease in circulating cholesterol and circulating calcium levels and female-specific decreased leukocyte cell numbers and a slight increase in auditory brainstem response.
- The *Pitpnm1* 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)

Pitpnm1 phosphatidylinositol transfer protein, membrane-associated 1 [Mus musculus (house mouse)]

Gene ID: 18739, updated on 31-Jan-2019

Summary



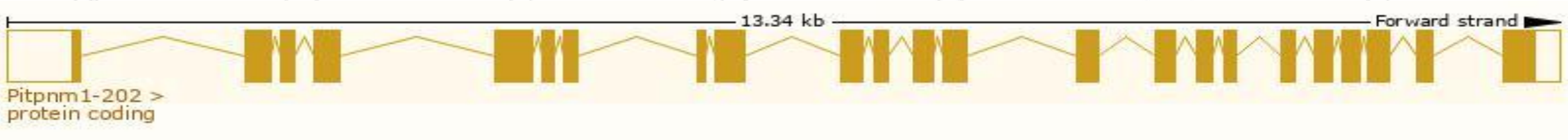
Official Symbol	Pitpnm1 provided by MGI
Official Full Name	phosphatidylinositol transfer protein, membrane-associated 1 provided by MGI
Primary source	MGI:MGI:1197524
See related	Ensembl:ENSMUSG00000024851
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	DRES9, Mpt-1, Nir-2, PITPnm 1, Pitpnm, R75447, Rd9, RdgB, RdgB1
Expression	Ubiquitous expression in cerebellum adult (RPKM 64.7), spleen adult (RPKM 49.4) and 22 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

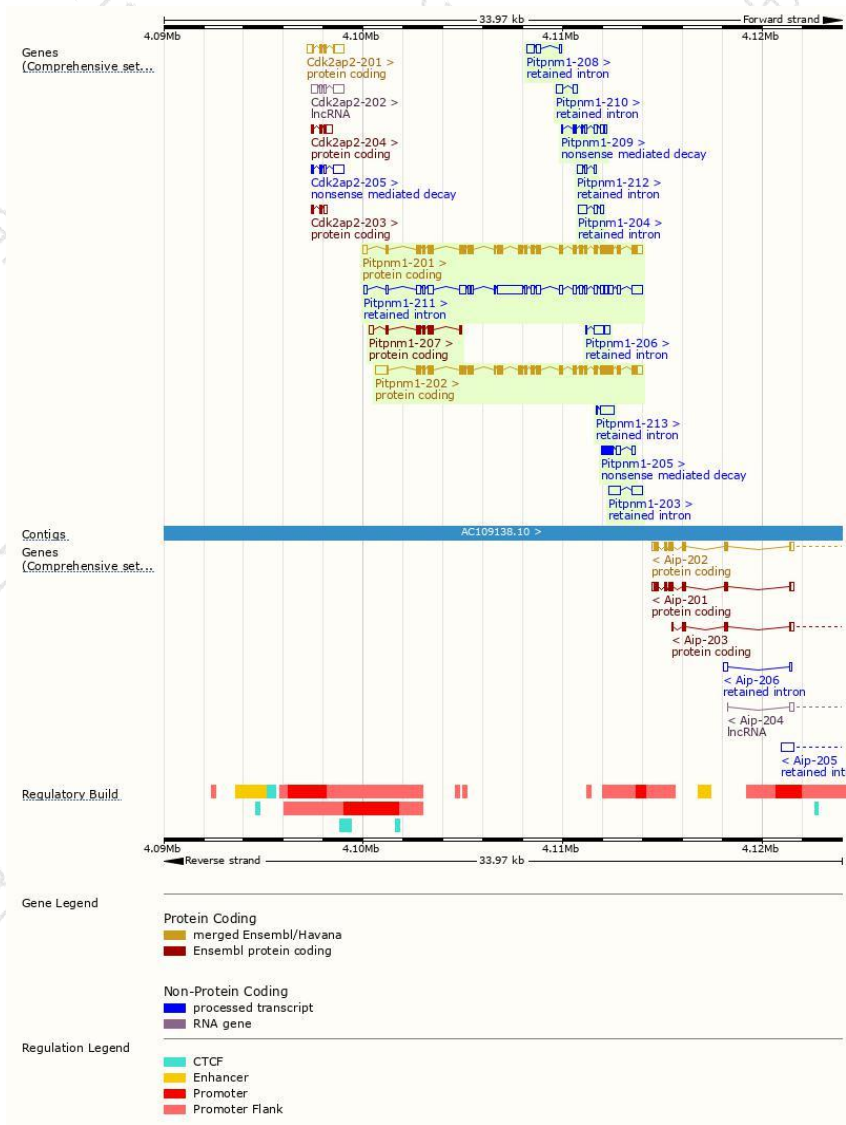
The gene has 13 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pitpnm1-202	ENSMUST00000100022.3	4512	1243aa	Protein coding	CCDS37883	Q35954	TSL:1 GENCODE basic APPRIS P1
Pitpnm1-201	ENSMUST00000049658.13	4206	1243aa	Protein coding	CCDS37883	Q35954	TSL:1 GENCODE basic APPRIS P1
Pitpnm1-207	ENSMUST00000131265.7	1043	252aa	Protein coding	-	D3YXW5	CDS 3' incomplete TSL:5
Pitpnm1-209	ENSMUST00000145214.8	772	85aa	Nonsense mediated decay	-	-	CDS 5' incomplete TSL:5
Pitpnm1-205	ENSMUST00000127056.1	766	143aa	Nonsense mediated decay	-	-	CDS 5' incomplete TSL:3
Pitpnm1-211	ENSMUST00000151957.7	4981	No protein	Retained intron	-	-	TSL:2
Pitpnm1-203	ENSMUST00000125596.1	1038	No protein	Retained intron	-	-	TSL:2
Pitpnm1-206	ENSMUST00000128798.1	733	No protein	Retained intron	-	-	TSL:3
Pitpnm1-213	ENSMUST00000237026.1	729	No protein	Retained intron	-	-	
Pitpnm1-208	ENSMUST00000139427.1	662	No protein	Retained intron	-	-	TSL:3
Pitpnm1-204	ENSMUST00000126620.2	656	No protein	Retained intron	-	-	TSL:5
Pitpnm1-210	ENSMUST00000145915.1	589	No protein	Retained intron	-	-	TSL:1
Pitpnm1-212	ENSMUST00000236992.1	462	No protein	Retained intron	-	-	

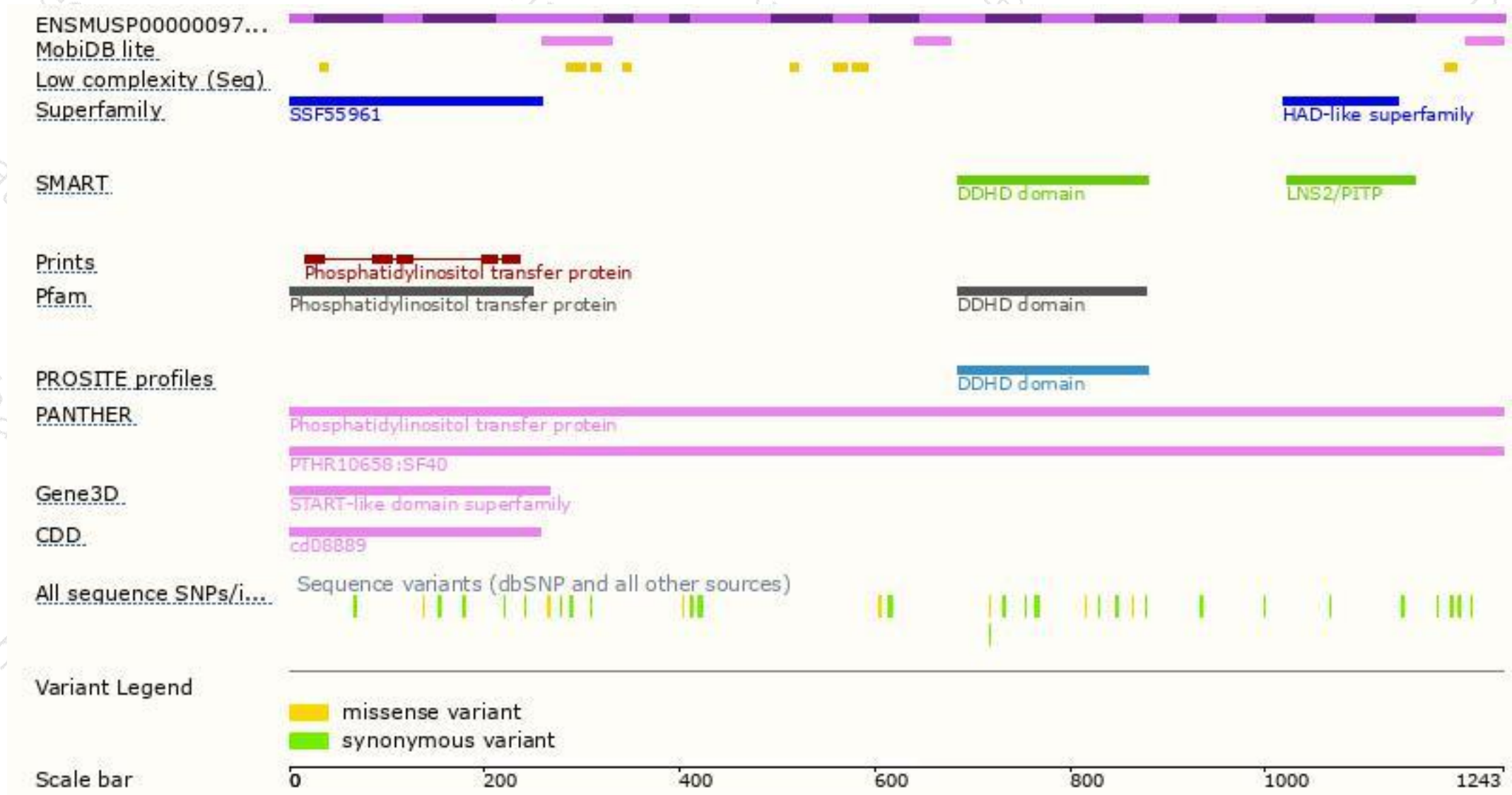
The strategy is based on the design of *Pitpnm1-202* transcript,The transcription is shown below



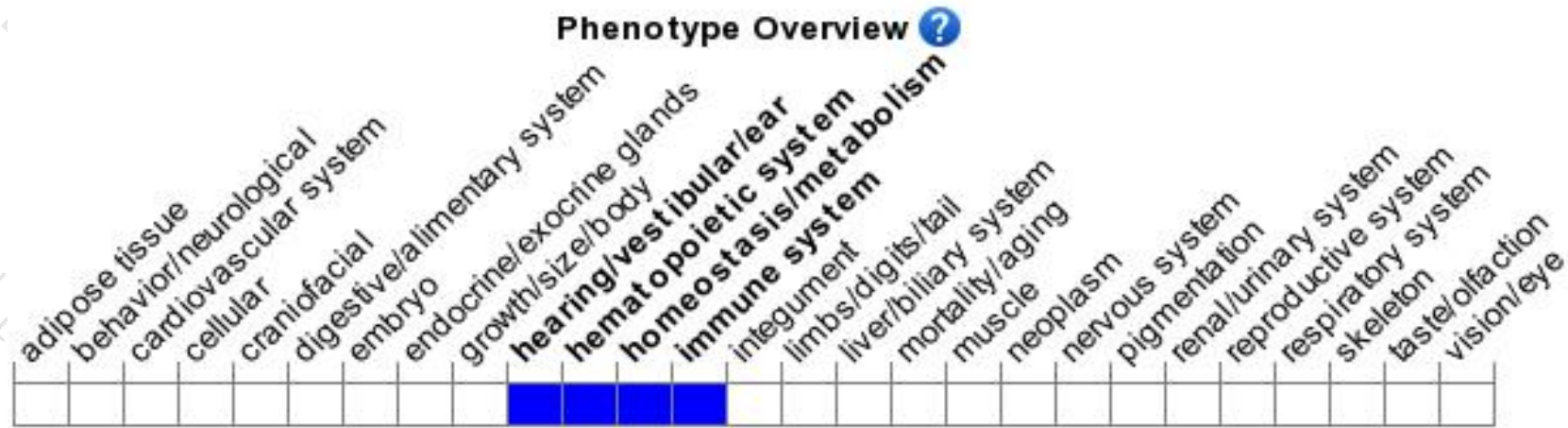
Genomic location distribution



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/>).

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

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