Pnpla7 Cas9-KO Strategy

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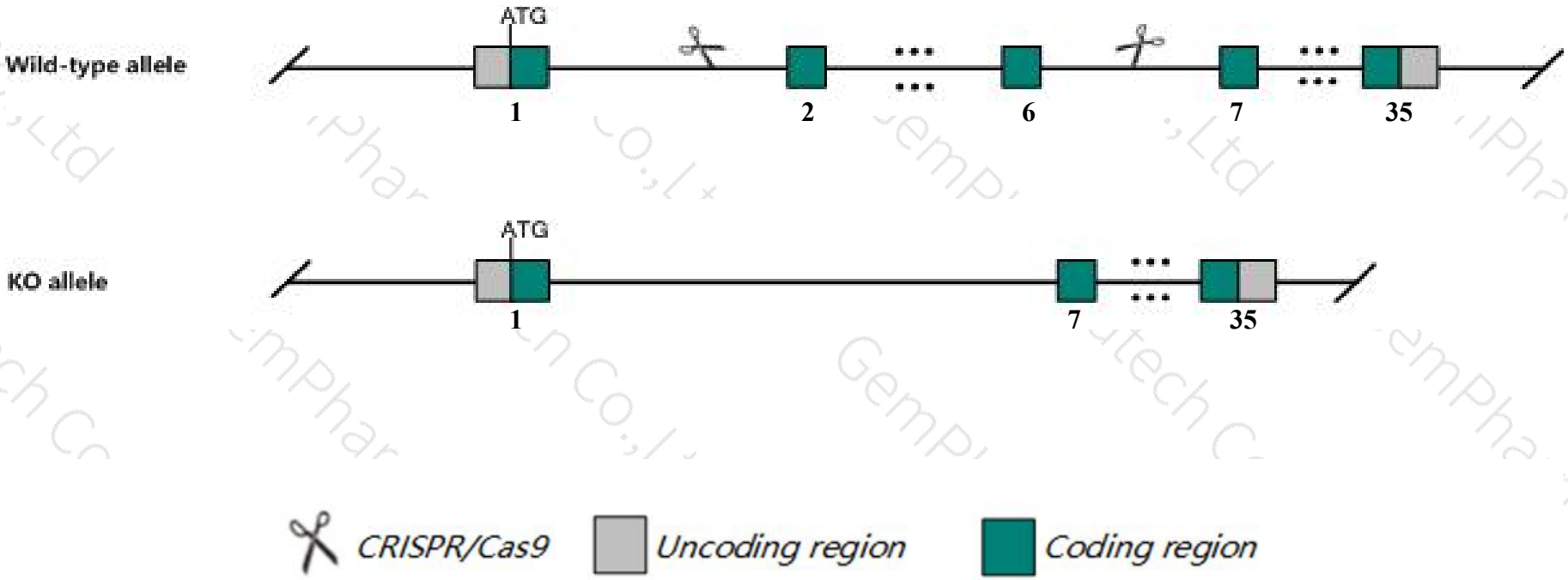
Project Overview

Project Name	***Pnpla7***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pnpla7* gene. The schematic diagram is as follows:



Technical routes

➢ The *Pnpla7* gene has 15 transcripts. According to the structure of *Pnpla7* gene, exon2-exon6 of *Pnpla7-201* (ENSMUST00000045295.13) transcript is recommended as the knockout region.The region contains 476bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Pnpla7* gene. The brief process is as follows: CRISPR/Cas9 systen

Notice

➢ The *Pnpla7* 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）

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Pnpla7 patatin-like phospholipase domain containing 7 [Mus musculus (house mouse)]

Gene ID: 241274, updated on 31-Jan-2019

Summary

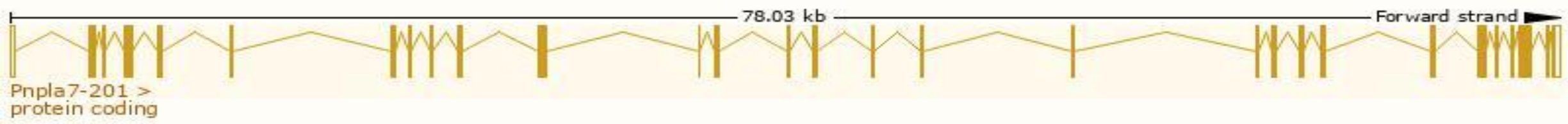
Official Symbol	Pnpla7 provided by MGI
Official Full Name	patatin-like phospholipase domain containing 7 provided by MGI
Primary source	MGI:MGI:2385325
See related	Ensembl:ENSMUSG00000036833
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	BC027342, E430013P11Rik, Nre
Expression	Ubiquitous expression in testis adult (RPKM 14.3), liver adult (RPKM 11.3) and 27 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

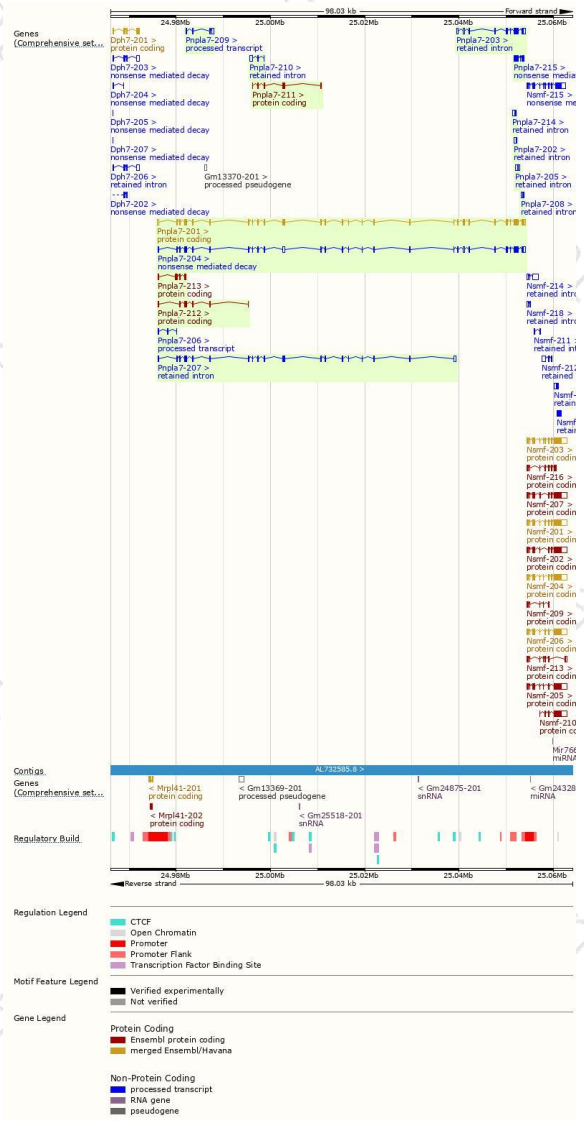
The gene has 15 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pnpla7-201	ENSMUST00000045295.13	4574	1352aa	Protein coding	CCDS50522	A2AJ88	TSL:1 GENCODE basic APPRIS P1
Pnpla7-212	ENSMUST00000152777.1	812	179aa	Protein coding	-	B0R010	CDS 3' incomplete TSL:5
Pnpla7-213	ENSMUST00000153618.7	630	120aa	Protein coding	-	B0R009	CDS 3' incomplete TSL:3
Pnpla7-211	ENSMUST00000146153.1	561	187aa	Protein coding	-	B0R011	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete TSL:5
Pnpla7-204	ENSMUST00000137913.7	4616	222aa	Nonsense mediated decay	-	A0A0A6YWJ6	TSL:2
Pnpla7-215	ENSMUST00000155601.1	715	158aa	Nonsense mediated decay	-	F6UDU9	CDS 5' incomplete TSL:3
Pnpla7-209	ENSMUST00000142139.1	651	No protein	Processed transcript	-	-	TSL:3
Pnpla7-206	ENSMUST00000139031.1	378	No protein	Processed transcript	-	-	TSL:2
Pnpla7-207	ENSMUST00000139643.7	2990	No protein	Retained intron	-	-	TSL:2
Pnpla7-203	ENSMUST00000132082.7	2018	No protein	Retained intron	-	-	TSL:1
Pnpla7-205	ENSMUST00000138536.1	810	No protein	Retained intron	-	-	TSL:2
Pnpla7-210	ENSMUST00000145508.1	756	No protein	Retained intron	-	-	TSL:3
Pnpla7-208	ENSMUST00000141584.1	530	No protein	Retained intron	-	-	TSL:2
Pnpla7-202	ENSMUST00000128517.1	493	No protein	Retained intron	-	-	TSL:3
Pnpla7-214	ENSMUST00000154359.1	457	No protein	Retained intron	-	-	TSL:3

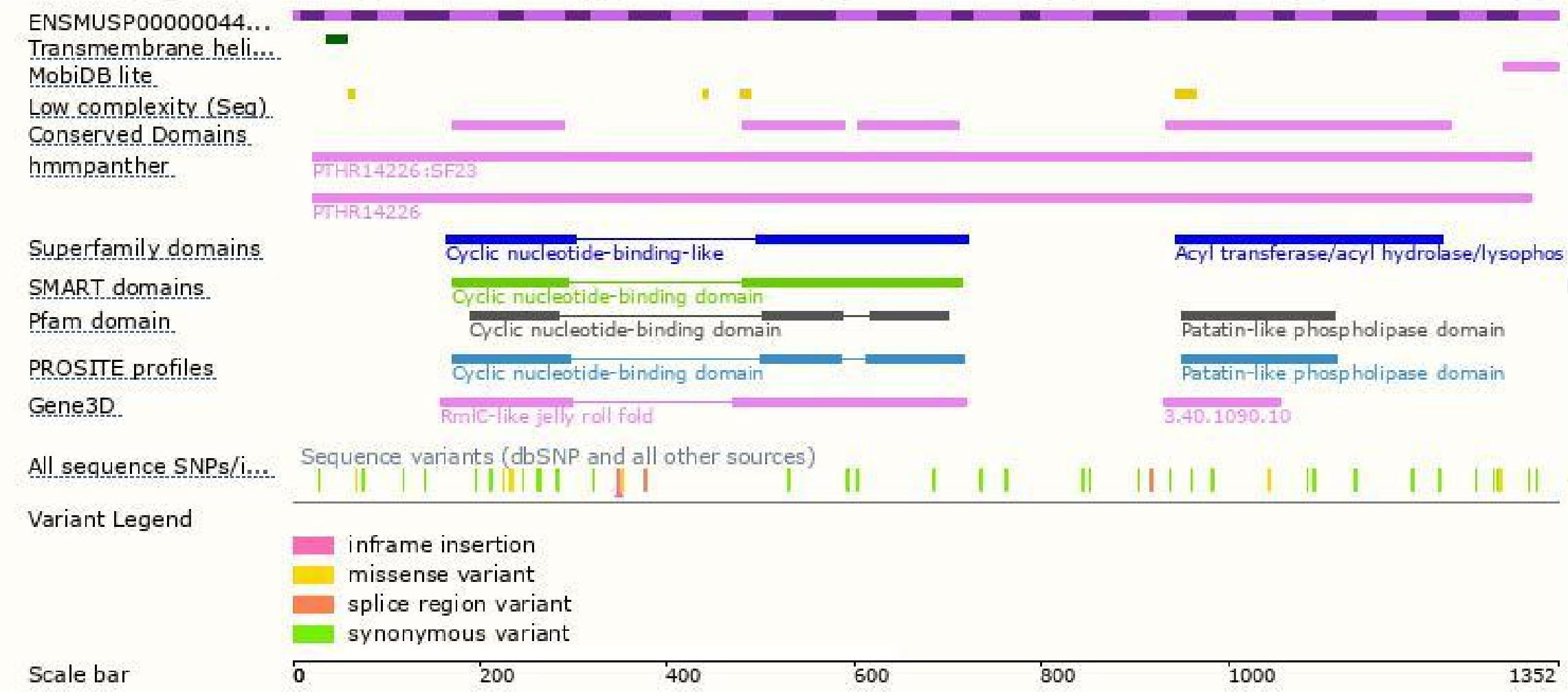
The strategy is based on the design of *Pnpla7-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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