

Pdia5 Cas9-KO Strategy

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Project Overview

Project Name

Pdia5

Project type

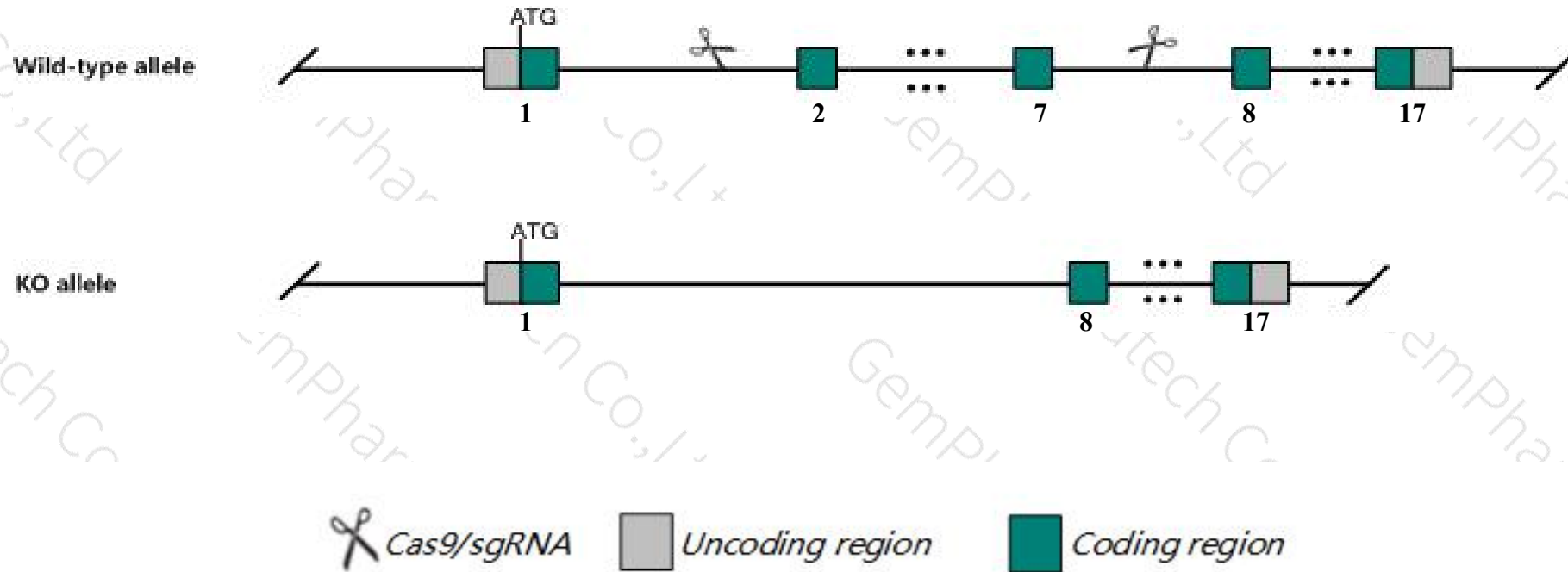
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pdia5* gene. The schematic diagram is as follows:



- The *Pdia5* gene has 4 transcripts. According to the structure of *Pdia5* gene, exon2-exon7 of *Pdia5-201* (ENSMUST00000023550.8) transcript is recommended as the knockout region. The region contains 499bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pdia5* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6JGpt 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/6JGpt mice.

- The *Pdia5* gene is located on the Chr16. 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)

Pdia5 protein disulfide isomerase associated 5 [Mus musculus (house mouse)]

Gene ID: 72599, updated on 31-Jan-2019

Summary



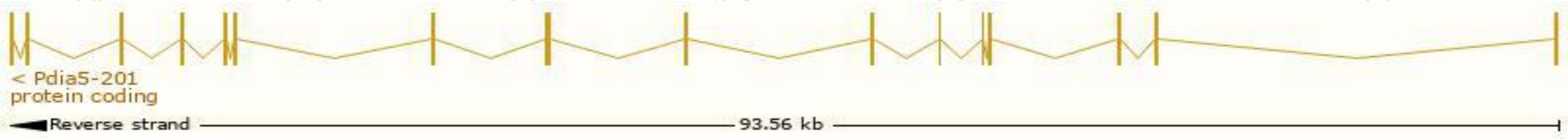
Official Symbol	Pdia5 provided by MGI
Official Full Name	protein disulfide isomerase associated 5 provided by MGI
Primary source	MGI:MGI:1919849
See related	Ensembl:ENSMUSG00000022844
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2700053F16Rik, AU015525, Pdir
Expression	Broad expression in placenta adult (RPKM 48.4), liver E18 (RPKM 23.7) and 18 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pdia5-201	ENSMUST00000023550.8	1809	517aa	Protein coding	CCDS37323	Q921X9	TSL:1 GENCODE basic APPRIS P1
Pdia5-203	ENSMUST00000231595.1	745	No protein	Processed transcript	-	-	
Pdia5-204	ENSMUST00000231779.1	679	No protein	Processed transcript	-	-	
Pdia5-202	ENSMUST00000231406.1	706	No protein	Retained intron	-	-	

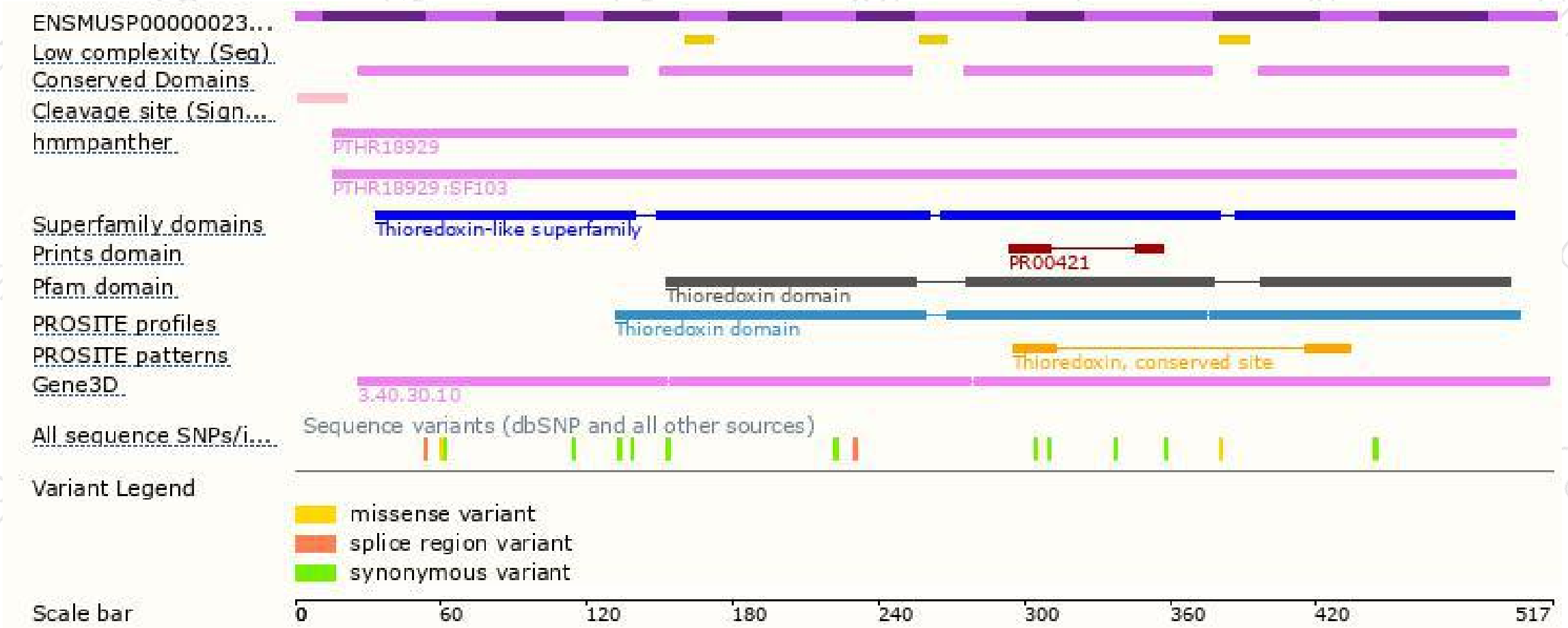
The strategy is based on the design of *Pdia5-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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