

# Pmaip1 Cas9-KO Strategy

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# Overview

## Target Gene Name

- Pmaip1

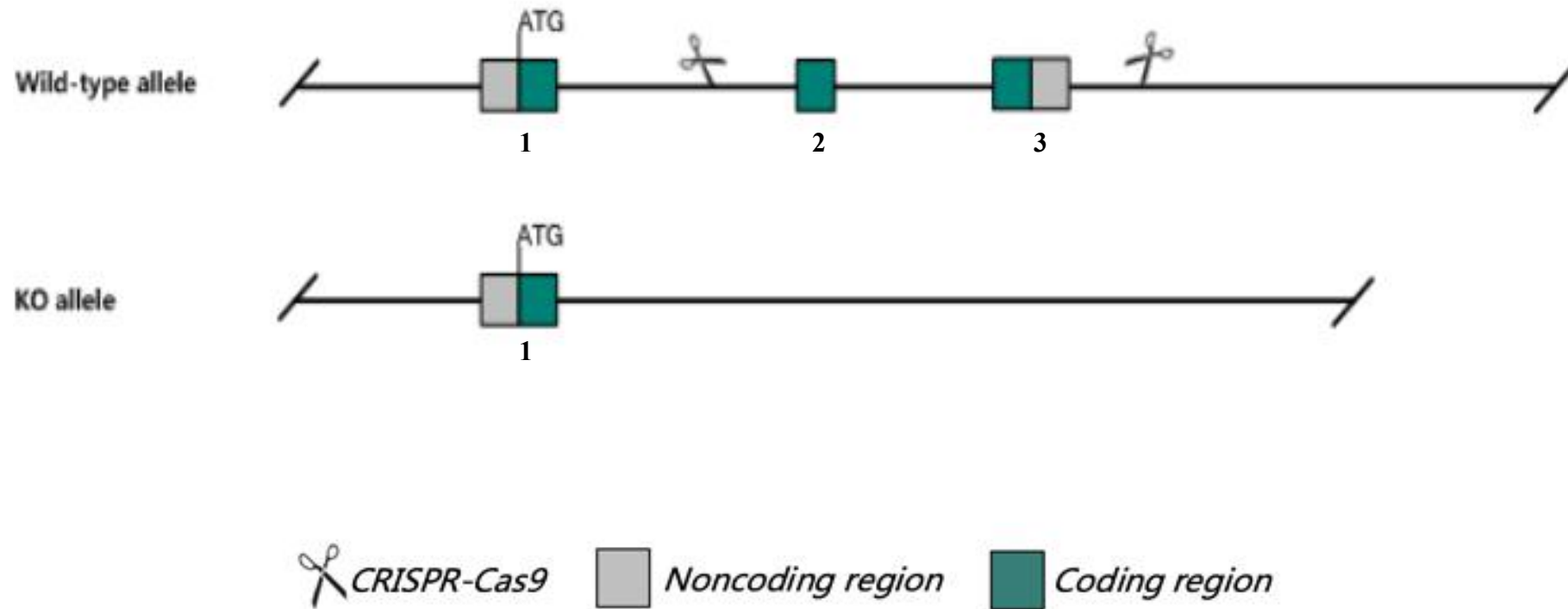
## Project Type

- Cas9-KO

## Genetic Background

- C57BL/6JGpt

# Strain Strategy



# Technical Information

- The *Pmaip1* gene has 3 transcripts. According to the structure of *Pmaip1* gene, exon2-exon3 of *Pmaip1*-201 (ENSMUST00000025399.9) transcript is recommended as the knockout region. The region contains most of coding sequence. Knocking out the region will result in disruption of protein function.
- In this project we use CRISPR-Cas9 technology to modify *Pmaip1* gene. The brief process is as follows: gRNAs were transcribed in vitro. Cas9 and gRNAs 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 on-target amplicon sequencing. A stable F1-generation mouse strain was obtained by mating positive F0-generation mice with C57BL/6JGpt mice and confirmation of the desired mutant allele was carried out by PCR and on-target amplicon sequencing.

# Gene Information

## Pmaip1 phorbol-12-myristate-13-acetate-induced protein 1 [Mus musculus (house mouse)]

Gene ID: 58801, updated on 19-Mar-2019

### Summary

<b>Official Symbol</b>	Pmaip1 provided by <a href="#">MGI</a>
<b>Official Full Name</b>	phorbol-12-myristate-13-acetate-induced protein 1 provided by <a href="#">MGI</a>
<b>Primary source</b>	<a href="#">MGI:MGI:1930146</a>
<b>See related</b>	<a href="#">Ensembl:ENSMUSG00000024521</a>
<b>Gene type</b>	protein coding
<b>RefSeq status</b>	PROVISIONAL
<b>Organism</b>	<a href="#">Mus musculus</a>
<b>Lineage</b>	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
<b>Also known as</b>	Noxa
<b>Expression</b>	Broad expression in placenta adult (RPKM 5.1), large intestine adult (RPKM 3.2) and 22 other tissues <a href="#">See more</a>
<b>Orthologs</b>	<a href="#">human</a> <a href="#">all</a>

Source: <https://www.ncbi.nlm.nih.gov/>

# Transcript Information

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

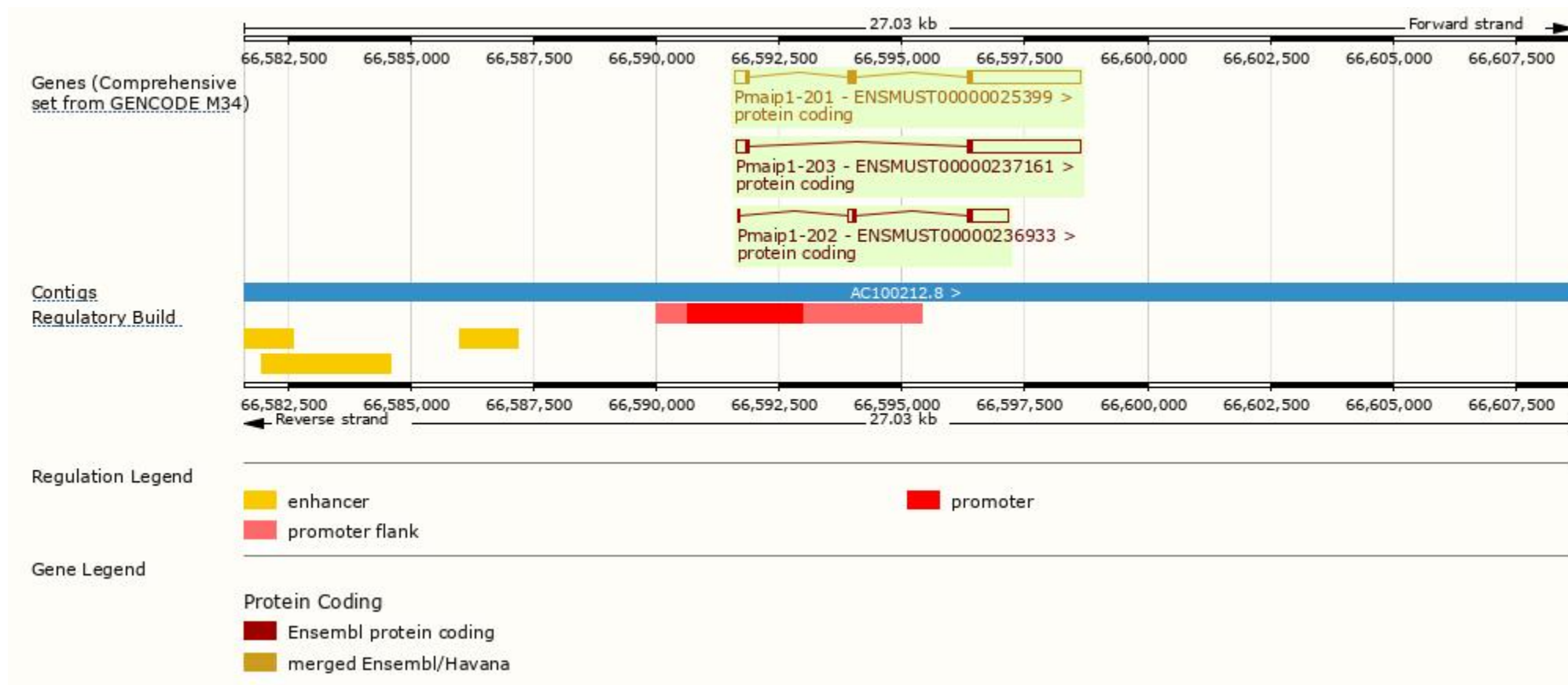
Transcript ID	Name	bp	Protein	Biotype	CCDS	UniProt Match	Flags
<a href="#">ENSMUST00000025399.9</a>	Pmaip1-201	2727	<a href="#">103aa</a>	Protein coding	<a href="#">CCDS29315</a>	<a href="#">Q9JM54</a>	Ensembl Canonical GENCODE basic APPRIS P1 TSL:1
<a href="#">ENSMUST000000237161.2</a>	Pmaip1-203	2534	<a href="#">51aa</a>	Protein coding		<a href="#">A0A494BAU0</a>	GENCODE basic
<a href="#">ENSMUST000000236933.2</a>	Pmaip1-202	1012	<a href="#">54aa</a>	Protein coding		<a href="#">A0A494BAM9</a>	GENCODE basic

The strategy is based on the design of *Pmaip1*-201 transcript, the transcription is shown below:

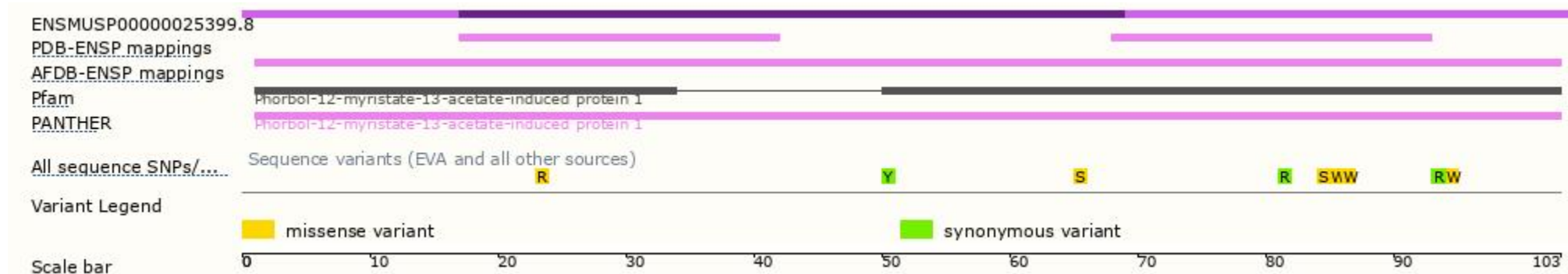


Source: <https://www.ensembl.org>

# Genomic Information

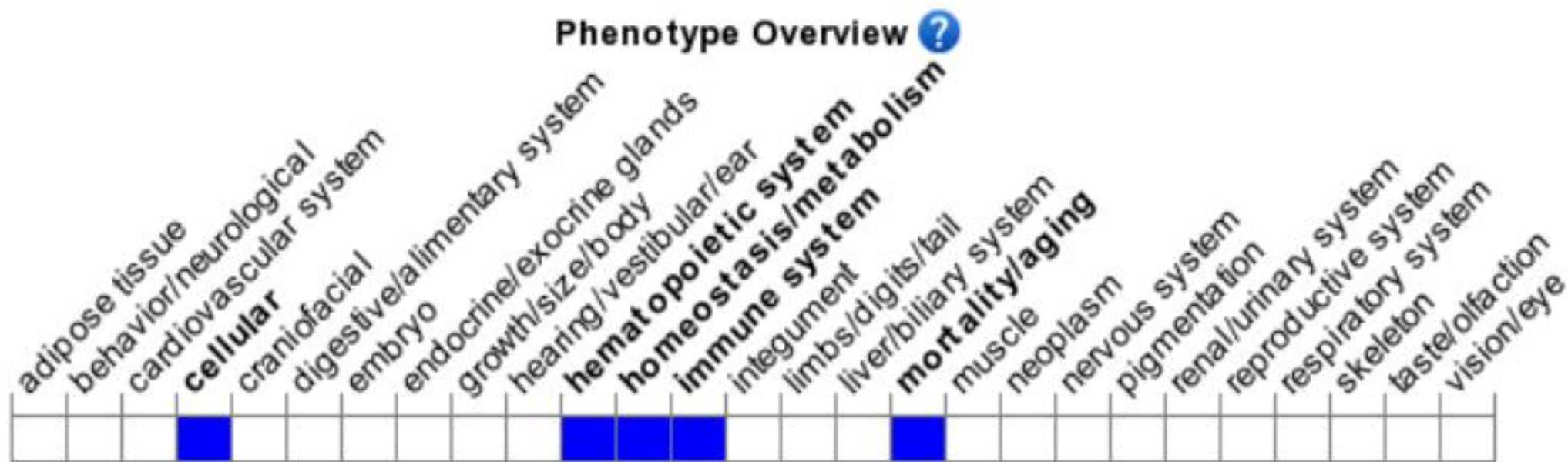


# Protein Information





# Mouse Phenotype Information (MGI)



- Though inactivation of this gene results in apoptotic abnormalities, homozygous null mice develop normally and show no evidence of tumorigenesis.

# Important Information

- According to the existing MGI data, though inactivation of this gene results in apoptotic abnormalities, homozygous null mice develop normally and show no evidence of tumorigenesis.
- *Pmaip1* is located on Chr18. If the knockout mice are crossed with other mouse strains to obtain double homozygous mutant offspring, please avoid the situation that the second gene is on the same chromosome.
- This Strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risks of the mutation on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.