

# *Ppp6c* Cas9-KO Strategy

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# Project Overview

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**Project Name**

*Ppp6c*

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**Project type**

**Cas9-KO**

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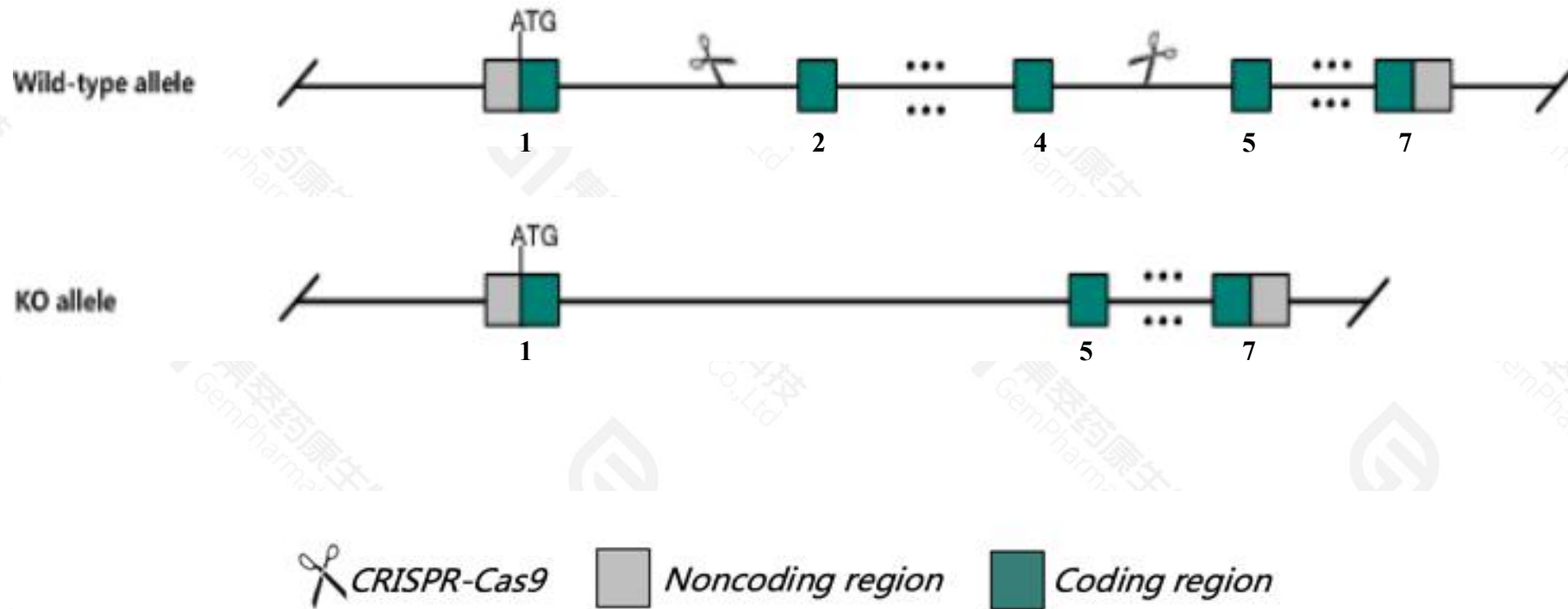
**Strain background**

**C57BL/6JGpt**

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# Knockout strategy

This model will use CRISPR-Cas9 technology to edit the *Ppp6c* gene. The schematic diagram is as follows:



- The *Ppp6c* gene has 5 transcripts. According to the structure of *Ppp6c* gene, exon2-exon4 of *Ppp6c-201*(ENSMUST00000028087.6) transcript is recommended as the knockout region. The region contains 304bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR-Cas9 technology to modify *Ppp6c* gene. The brief process is as follows: CRISPR-Cas9 system 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.



- According to the existing MGI data, mice homozygous for a knock-out allele exhibit abnormal embryonic development and embryonic lethality. Mice homozygous for a conditional allele activated in skin cells exhibit increased susceptibility to chemically induced skin tumors with increased proliferative and inflammatory responses in the skin.
- The *Ppp6c* 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.

## Ppp6c protein phosphatase 6, catalytic subunit [Mus musculus (house mouse)]

Gene ID: 67857, updated on 19-Mar-2019

### Summary



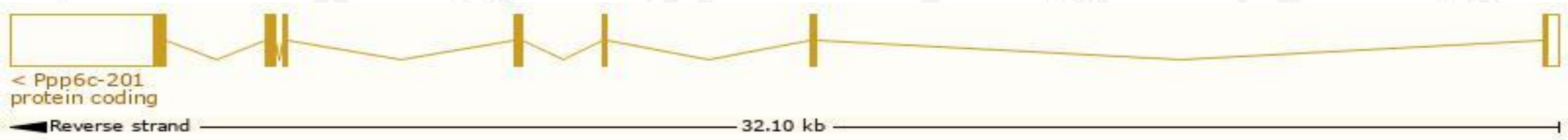
<b>Official Symbol</b>	Ppp6c provided by <a href="#">MGI</a>
<b>Official Full Name</b>	protein phosphatase 6, catalytic subunit provided by <a href="#">MGI</a>
<b>Primary source</b>	<a href="#">MGI:MGI:1915107</a>
<b>See related</b>	<a href="#">Ensembl:ENSMUSG00000026753</a>
<b>Gene type</b>	protein coding
<b>RefSeq status</b>	VALIDATED
<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>	2310003C10Rik, Pp6C
<b>Expression</b>	Ubiquitous expression in placenta adult (RPKM 11.6), bladder adult (RPKM 11.3) and 28 other tissues <a href="#">See more</a>
<b>Orthologs</b>	<a href="#">human</a> <a href="#">all</a>

# Transcript information (Ensembl)

The gene has 5 transcripts,all transcripts are shown below:

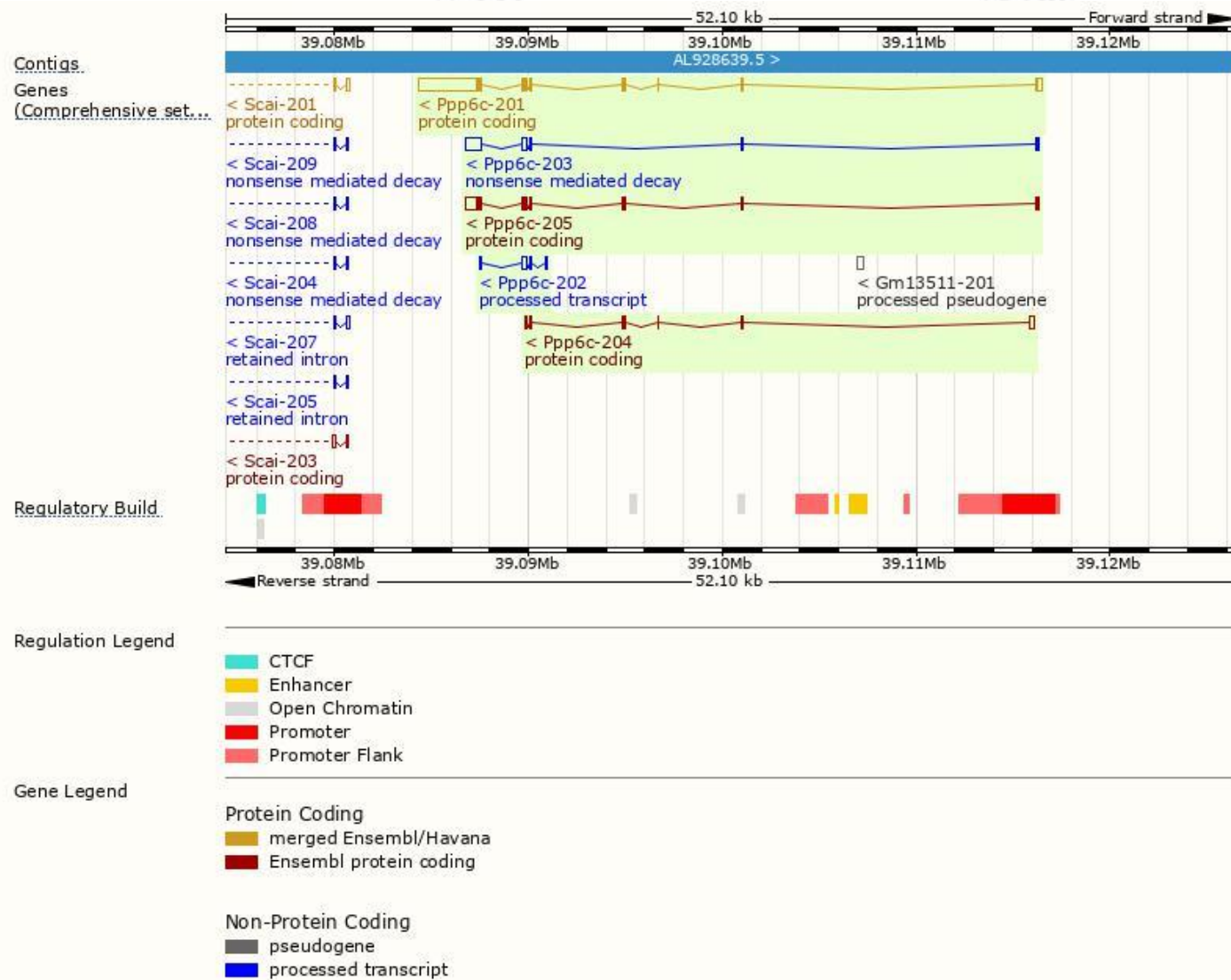
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ppp6c-201	<a href="#">ENSMUST00000028087.5</a>	4115	<a href="#">305aa</a>	Protein coding	<a href="#">CCDS16017</a>	<a href="#">Q9CQR6</a>	TSL:1 GENCODE basic APPRIS P1
Ppp6c-205	<a href="#">ENSMUST000000204701.2</a>	1495	<a href="#">283aa</a>	Protein coding	-	<a href="#">A0A0N4SVL9</a>	TSL:5 GENCODE basic
Ppp6c-204	<a href="#">ENSMUST000000204368.1</a>	635	<a href="#">83aa</a>	Protein coding	-	<a href="#">A0A0N4SW66</a>	CDS 3' incomplete TSL:5
Ppp6c-203	<a href="#">ENSMUST000000204257.2</a>	1358	<a href="#">81aa</a>	Nonsense mediated decay	-	<a href="#">A0A0N4SVE2</a>	TSL:5
Ppp6c-202	<a href="#">ENSMUST000000143733.1</a>	487	No protein	Processed transcript	-	-	TSL:3

The strategy is based on the design of *Ppp6c-201* transcript,the transcription is shown below:



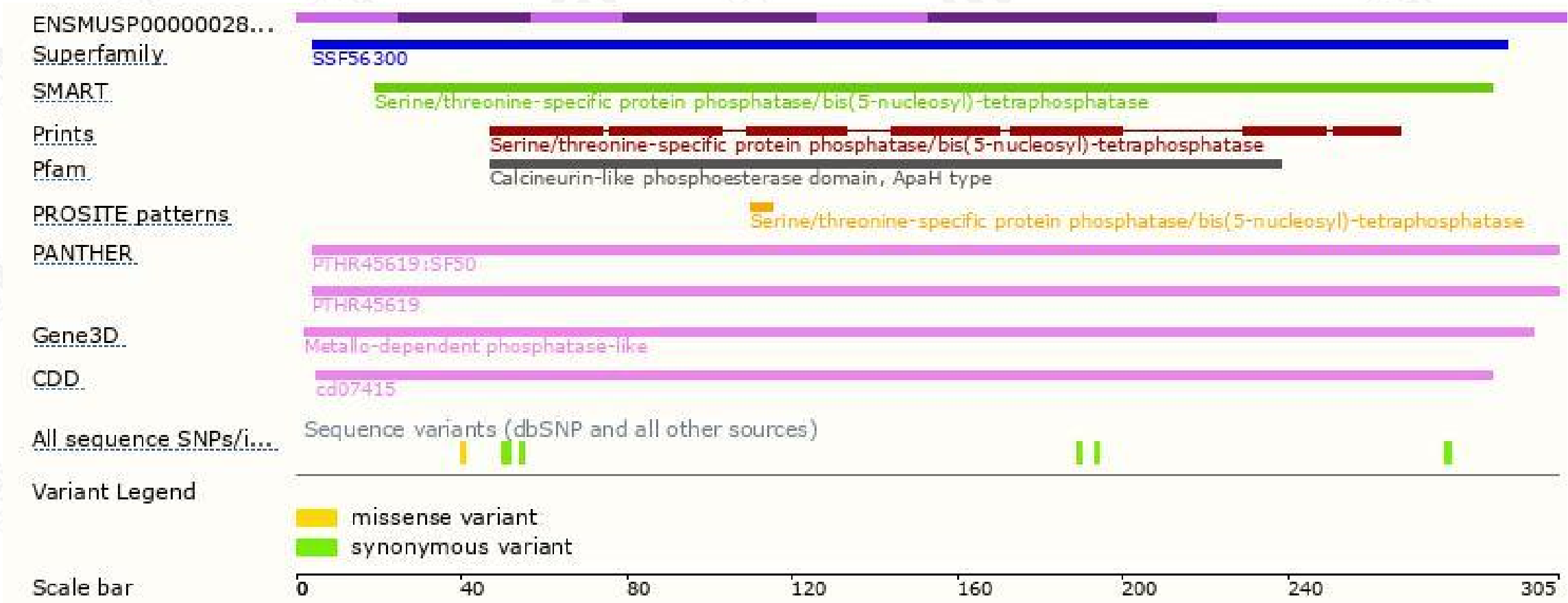


# Genomic location distribution

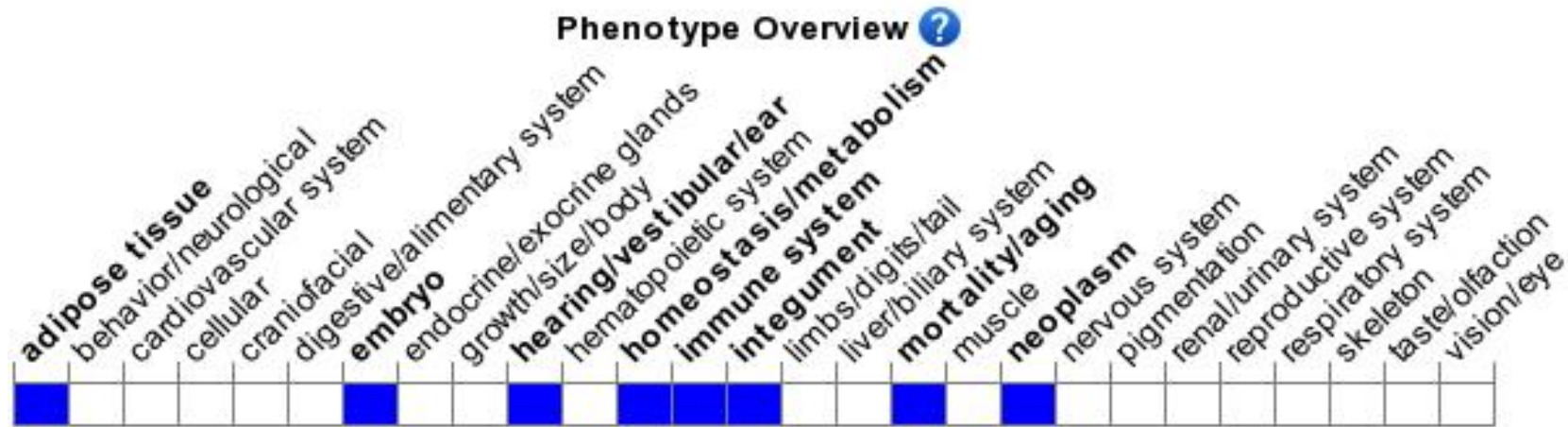




# Protein domain



# 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, mice homozygous for a knock-out allele exhibit abnormal embryonic development and embryonic lethality. Mice homozygous for a conditional allele activated in skin cells exhibit increased susceptibility to chemically induced skin tumors with increased proliferative and inflammatory responses in the skin.

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

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