

# *Ppp1r13b* Cas9-KO Strategy

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**Reviewer:**

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# Project Overview

**Project Name**

*Ppp1r13b*

**Project type**

**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ppp1r13b* gene. The schematic diagram is as follows:



- The *Ppp1r13b* gene has 4 transcripts. According to the structure of *Ppp1r13b* gene, exon2-exon3 of *Ppp1r13b-201* (ENSMUST00000054815.14) transcript is recommended as the knockout region. The region contains 268bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ppp1r13b* gene. The brief process is as follows: CRISPR/Cas9 sys

- According to the existing MGI data, Homozygous null mutants show lymphatic vascular phenotypes with subcutaneous edema detected only during embryogenesis, delayed lymphatic vessel formation, and mispatterned collecting lymphatic vessels.
- Transcript 203 CDS 5' incomplete the influences is unknown.
- The *Ppp1r13b* gene is located on the Chr12. 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)

## Ppp1r13b protein phosphatase 1, regulatory subunit 13B [Mus musculus (house mouse)]

Gene ID: 21981, updated on 31-Jan-2019

### Summary



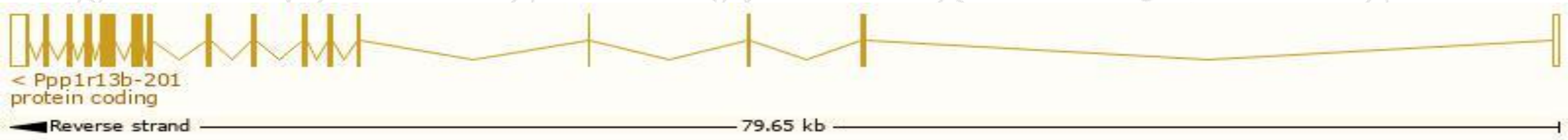
<b>Official Symbol</b>	Ppp1r13b provided by <a href="#">MGI</a>
<b>Official Full Name</b>	protein phosphatase 1, regulatory subunit 13B provided by <a href="#">MGI</a>
<b>Primary source</b>	<a href="#">MGI:MGI:1336199</a>
<b>See related</b>	<a href="#">Ensembl:ENSMUSG000000021285</a>
<b>Gene type</b>	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>	AI449786, ASPP1, AW545810, Trp53bp2, Trp53bp2, p85
<b>Expression</b>	Ubiquitous expression in lung adult (RPKM 13.8), genital fat pad adult (RPKM 10.7) and 28 other tissues <a href="#">See more</a>
<b>Orthologs</b>	<a href="#">human</a> <a href="#">all</a>

# Transcript information (Ensembl)

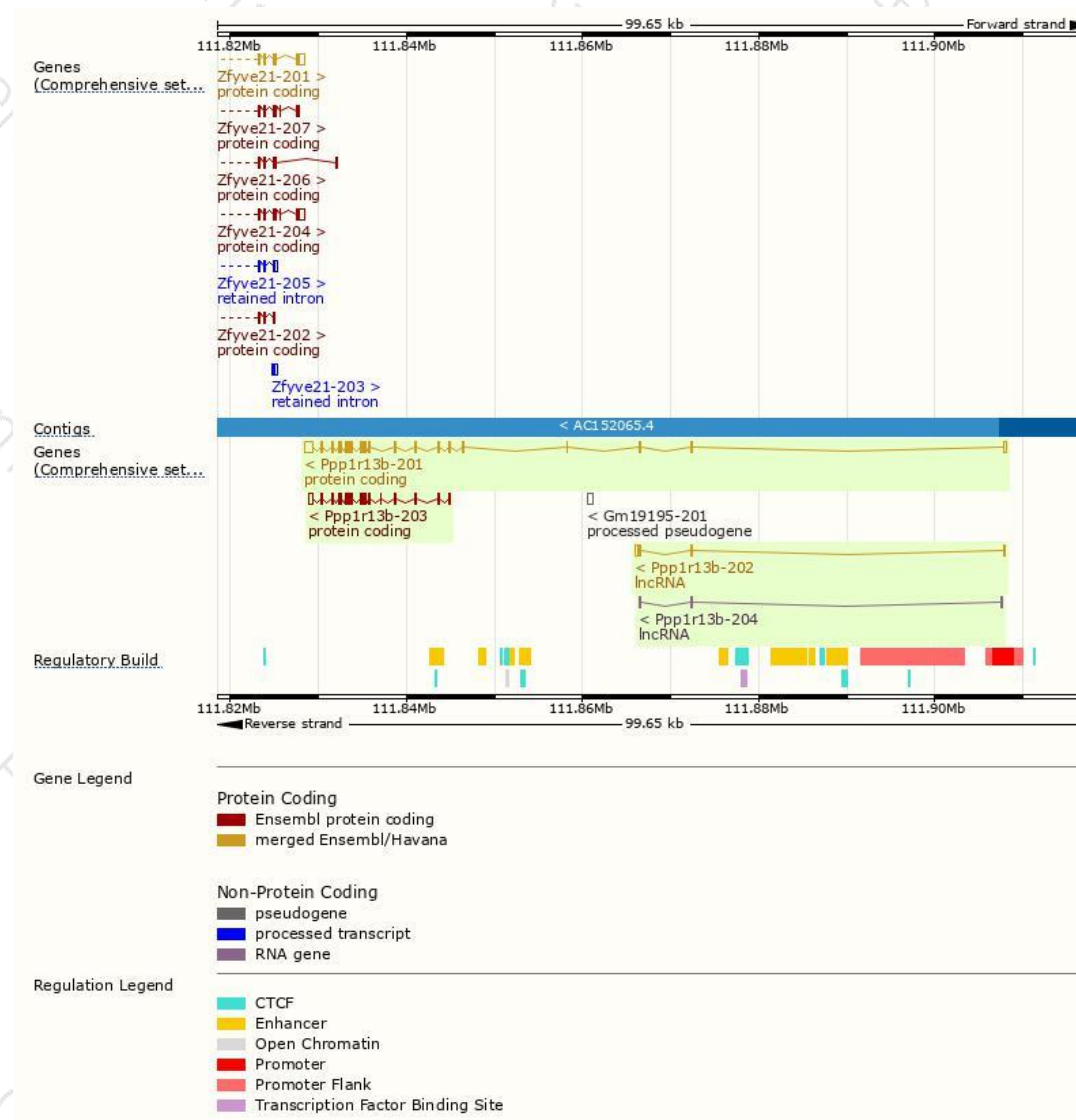
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ppp1r13b-201	<a href="#">ENSMUST00000054815.14</a>	4389	<a href="#">1087aa</a>	Protein coding	<a href="#">CCDS56866</a>	<a href="#">Q62415</a>	TSL:1 GENCODE basic APPRIS P1
Ppp1r13b-203	<a href="#">ENSMUST00000220486.1</a>	3343	<a href="#">964aa</a>	Protein coding	-	<a href="#">A0A1Y7VJH3</a>	CDS 5' incomplete TSL:5
Ppp1r13b-202	<a href="#">ENSMUST00000163747.3</a>	770	No protein	lncRNA	-	-	TSL:1
Ppp1r13b-204	<a href="#">ENSMUST00000220927.1</a>	320	No protein	lncRNA	-	-	TSL:3

The strategy is based on the design of *Ppp1r13b-201* transcript,The transcription is shown below



# Genomic location distribution

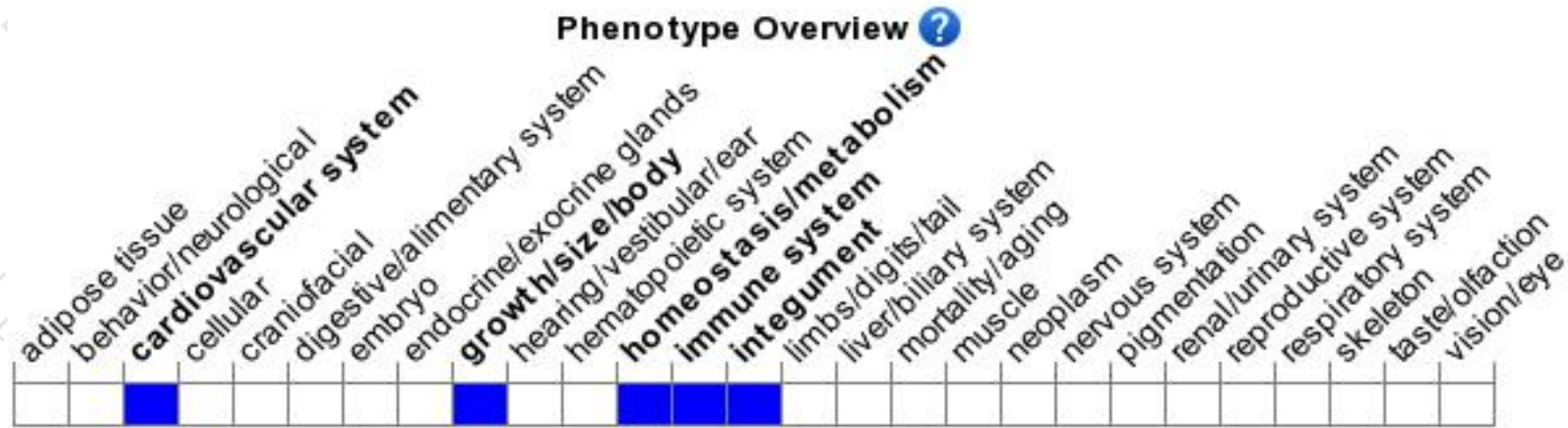




# Protein domain



# 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, Homozygous null mutants show lymphatic vascular phenotypes with subcutaneous edema detected only during embryogenesis, delayed lymphatic vessel formation, and mispatterned collecting lymphatic vessels.

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

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