

Inpp1 Cas9-KO Strategy

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Project Overview



Project Name

Inpp1

Project type

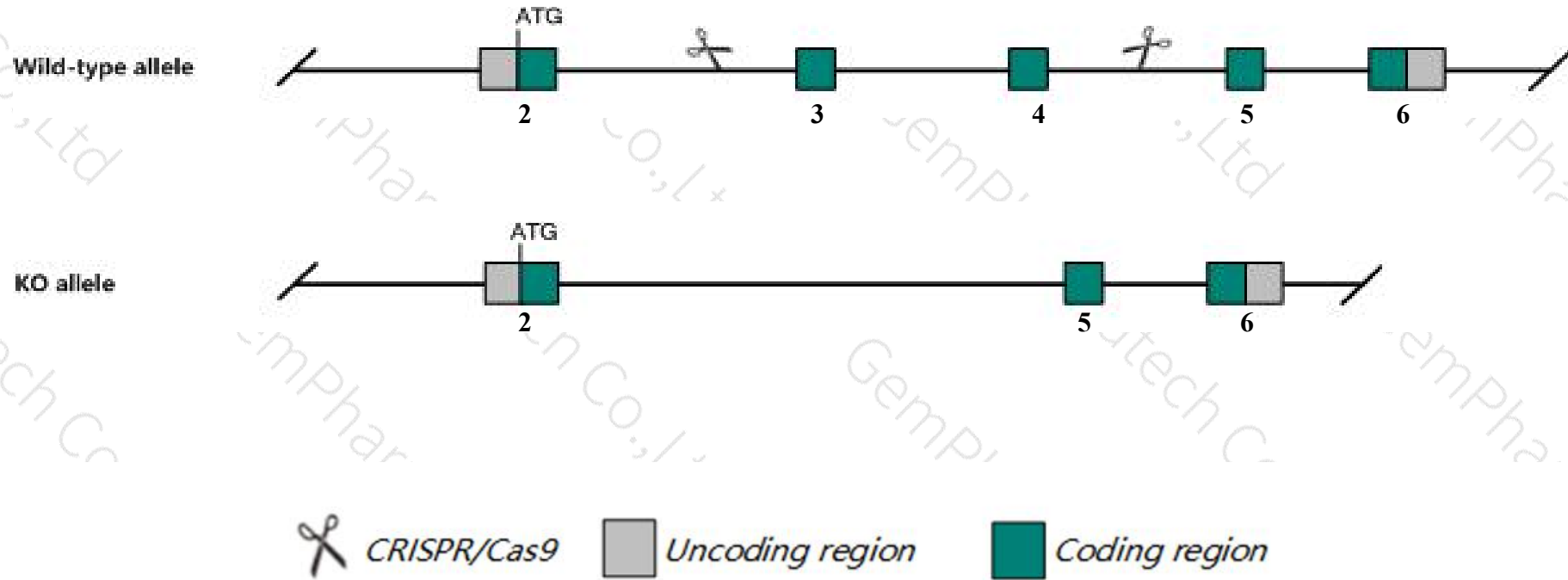
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Inpp1* gene. The schematic diagram is as follows:



- The *Inpp1* gene has 6 transcripts. According to the structure of *Inpp1* gene, exon3-exon4 of *Inpp1-201* (ENSMUST00000027271.8) transcript is recommended as the knockout region. The region contains 262bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Inpp1* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Female mice homozygous for a targeted allele exhibit decreased susceptibility to bacterial infection.
- Transcript 203,205 CDS 3' incomplete the influences is unknown.
- The *Inpp1* gene is located on the Chr1. 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)

Inpp1 inositol polyphosphate-1-phosphatase [Mus musculus (house mouse)]

Gene ID: 16329, updated on 31-Jan-2019

Summary



Official Symbol	Inpp1 provided by MGI
Official Full Name	inositol polyphosphate-1-phosphatase provided by MGI
Primary source	MGI:MGI:104848
See related	Ensembl:ENSMUSG00000026102
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	2300002C06Rik, AV137389
Expression	Ubiquitous expression in cerebellum adult (RPKM 6.4), CNS E18 (RPKM 4.2) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

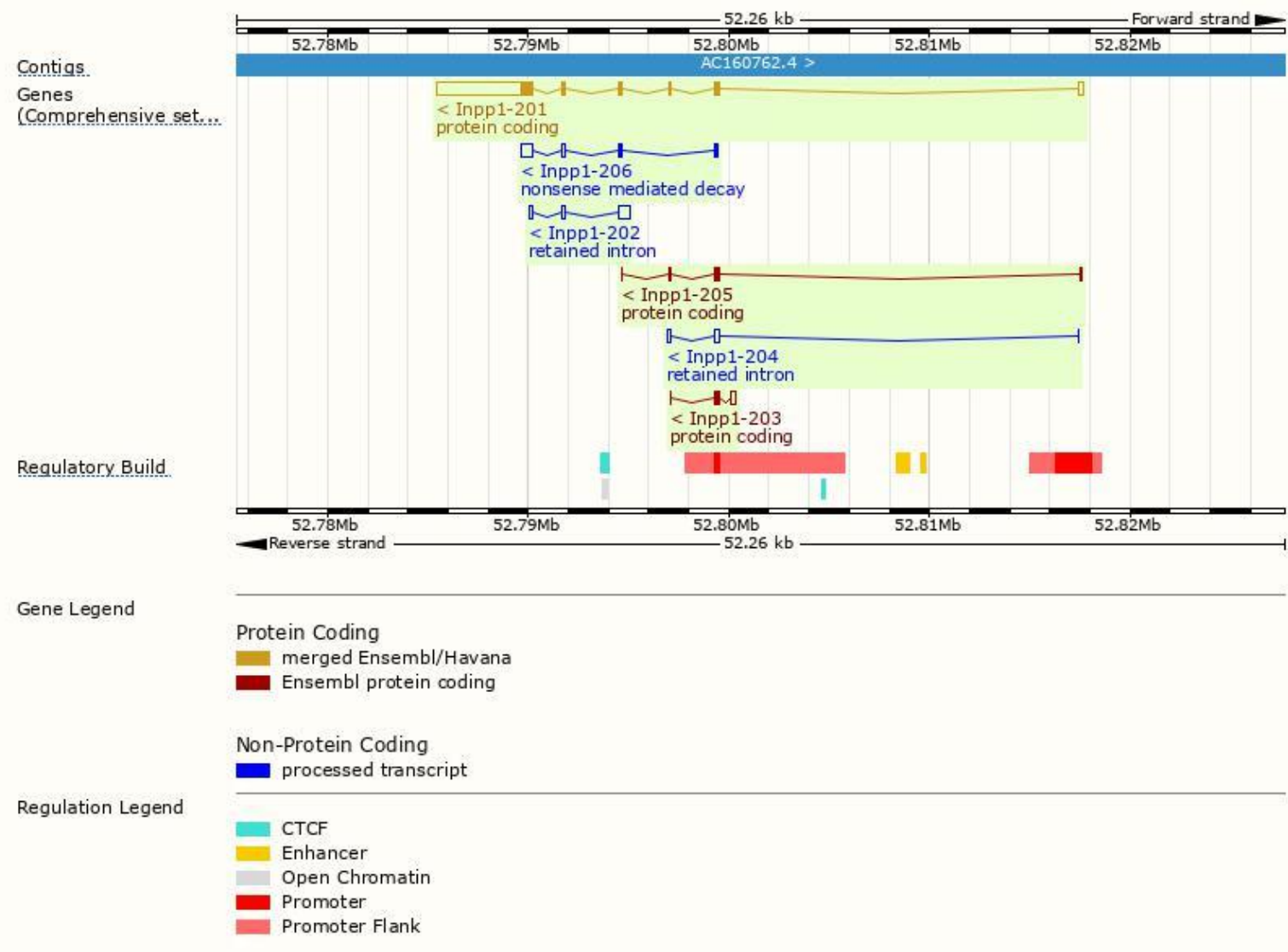
The gene has 6 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Inpp1-201	ENSMUST00000027271.8	5767	396aa	Protein coding	CCDS14947	P49442	TSL:1 GENCODE basic APPRIS P1
Inpp1-203	ENSMUST00000159725.1	541	80aa	Protein coding	-	E0CYQ4	CDS 3' incomplete TSL:3
Inpp1-205	ENSMUST00000162576.7	376	90aa	Protein coding	-	E0CX64	CDS 3' incomplete TSL:5
Inpp1-206	ENSMUST00000177279.7	1130	110aa	Nonsense mediated decay	-	H3BK26	TSL:5
Inpp1-202	ENSMUST00000159607.1	916	No protein	Retained intron	-	-	TSL:3
Inpp1-204	ENSMUST00000162351.1	425	No protein	Retained intron	-	-	TSL:2

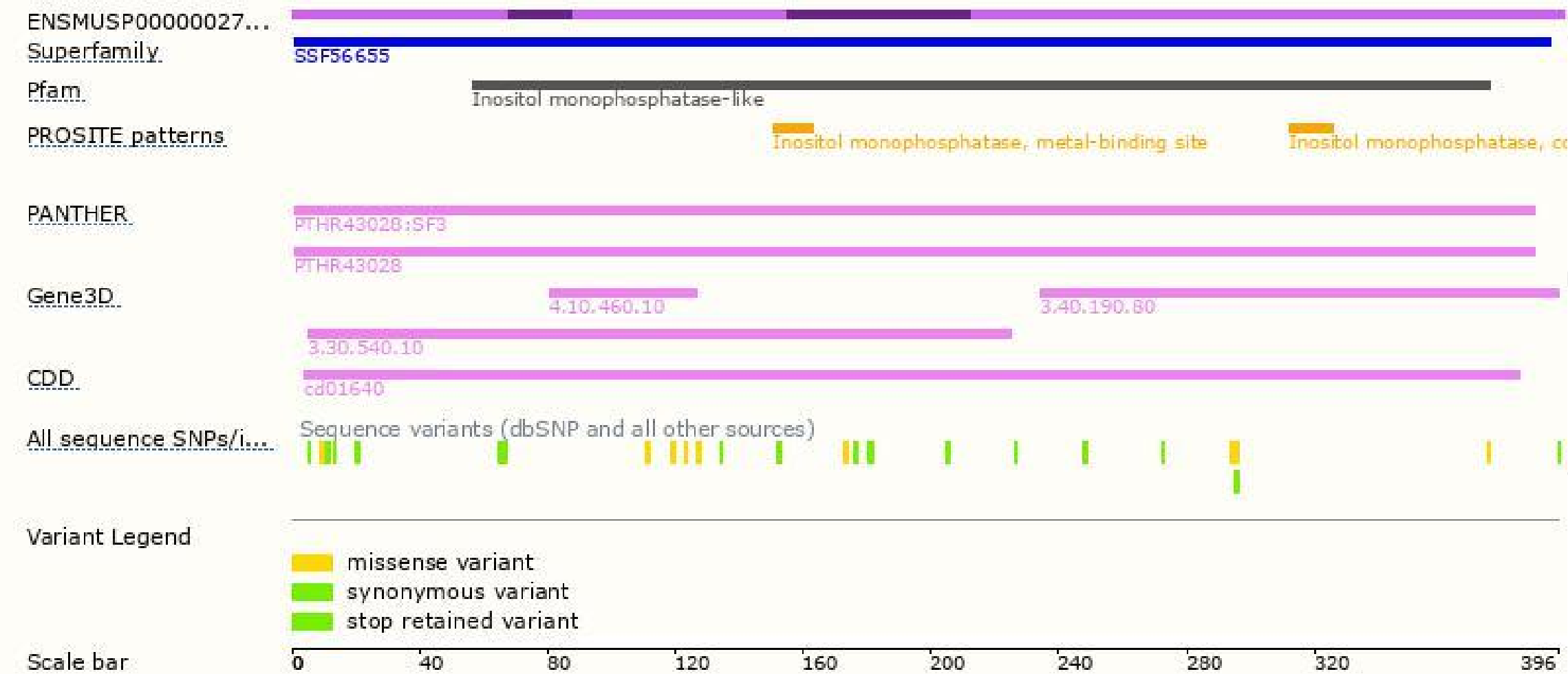
The strategy is based on the design of *Inpp1-201* transcript, The transcription is shown below



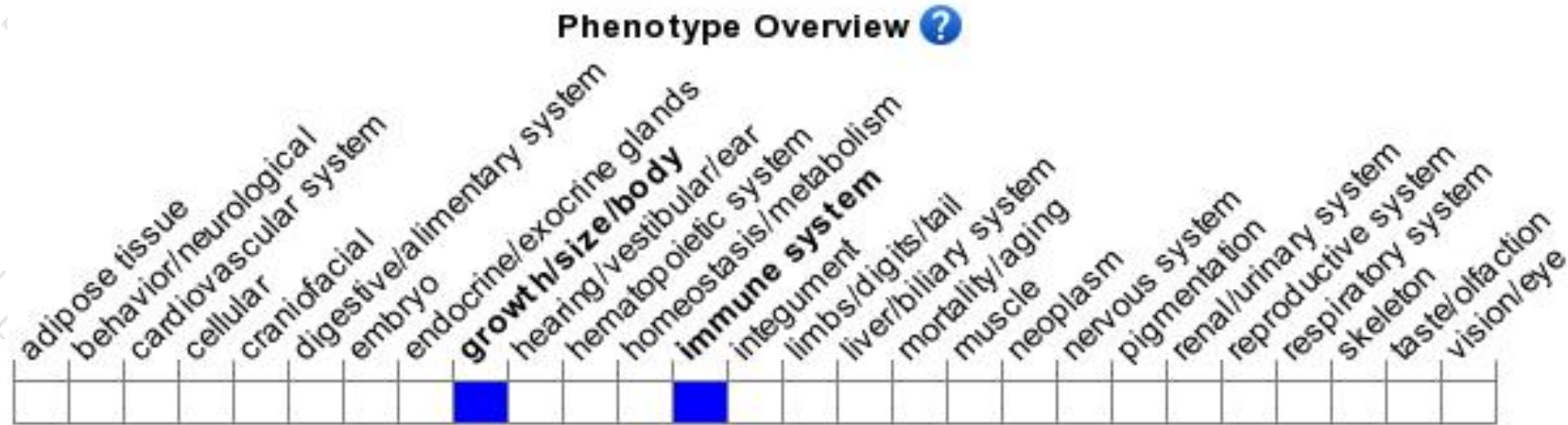
Genomic location distribution



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, Female mice homozygous for a targeted allele exhibit decreased susceptibility to bacterial infection.

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

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