

# *Yipf6* Cas9-KO Strategy

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# Project Overview

**Project Name**

***Yipf6***

**Project type**

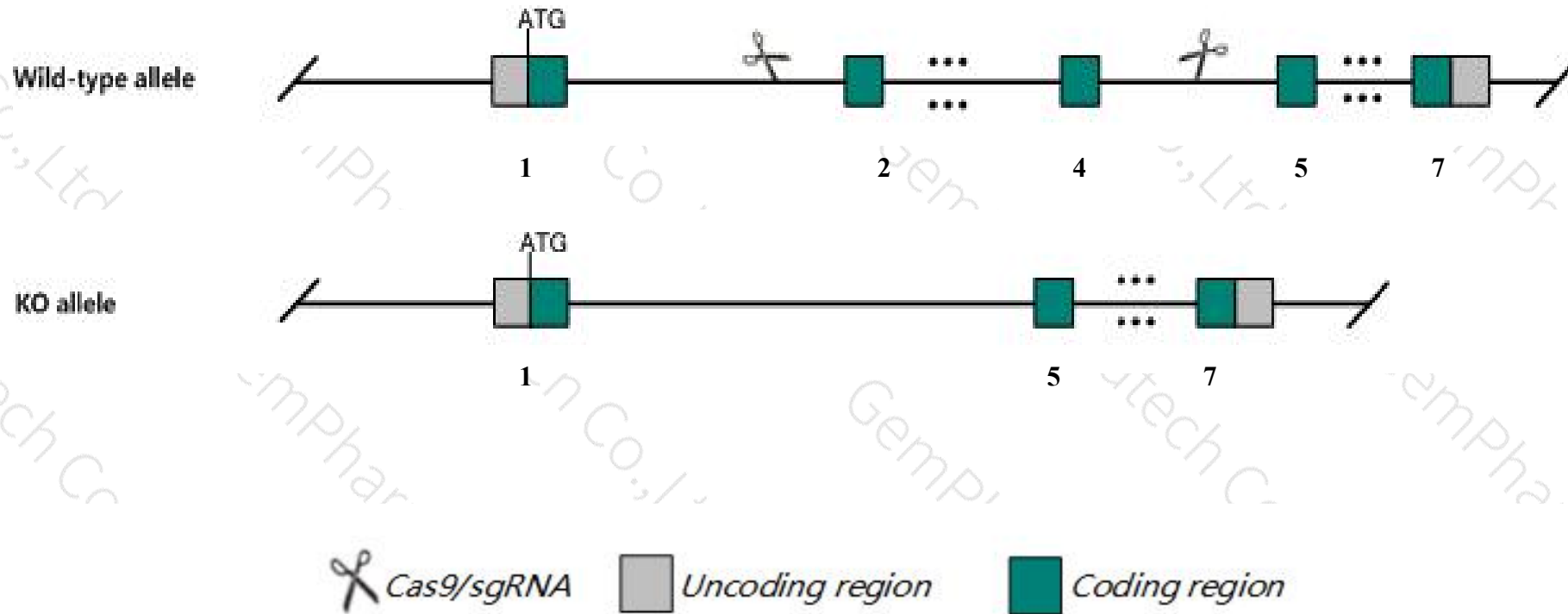
**Cas9-KO**

**Strain background**

**C57BL/6J**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Yipf6* gene. The schematic diagram is as follows:



- The *Yipf6* gene has 6 transcripts. According to the structure of *Yipf6* gene, exon2-exon4 of *Yipf6-201* (ENSMUST00000054697.6) transcript is recommended as the knockout region. The region contains 251bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Yipf6* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6J 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/6J mice.

- According to the existing MGI data, Mice homozygous or hemizygous for an ENU-induced allele exhibit colitis and increased susceptibility to induced colitis with decreased Paneth and goblet cells.
- The *Yipf6* gene is located on the ChrX. 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)

## Yipf6 Yip1 domain family, member 6 [Mus musculus (house mouse)]

Gene ID: 77929, updated on 19-Feb-2019

### Summary



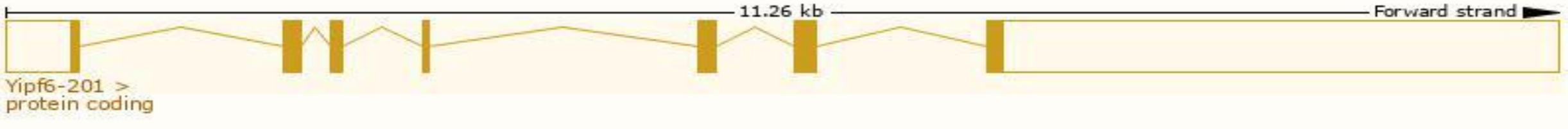
<b>Official Symbol</b>	Yipf6 provided by <a href="#">MGI</a>
<b>Official Full Name</b>	Yip1 domain family, member 6 provided by <a href="#">MGI</a>
<b>Primary source</b>	<a href="#">MGI:MGI:1925179</a>
<b>See related</b>	<a href="#">Ensembl:ENSMUSG00000047694</a>
<b>Gene type</b>	protein coding
<b>RefSeq 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>	A430107J06Rik
<b>Expression</b>	Ubiquitous expression in bladder adult (RPKM 7.2), placenta adult (RPKM 5.4) and 28 other tissues <a href="#">See more</a>
<b>Orthologs</b>	<a href="#">human</a> <a href="#">all</a>

# Transcript information (Ensembl)

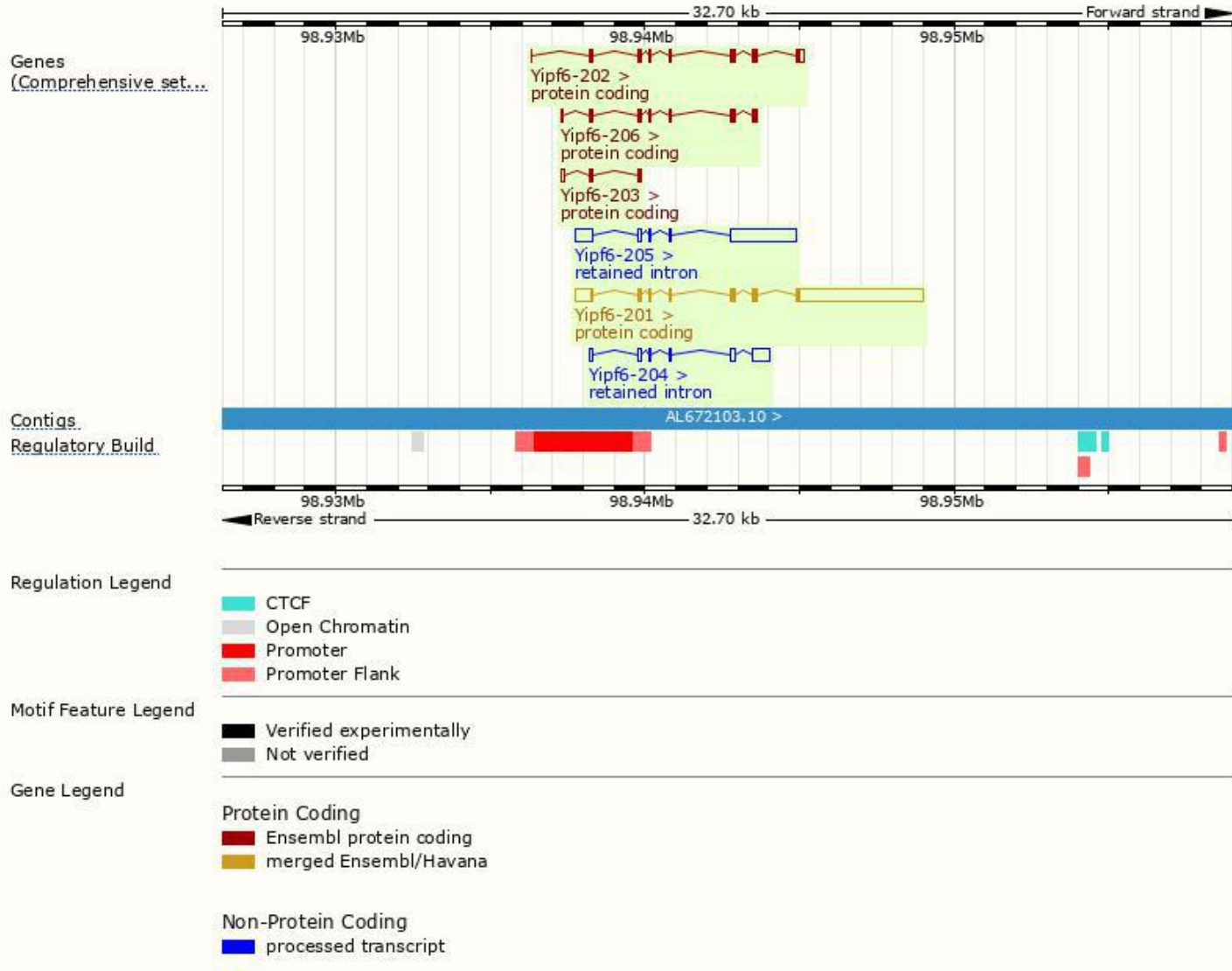
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Yipf6-201	<a href="#">ENSMUST00000054697.6</a>	5211	<a href="#">236aa</a>	Protein coding	<a href="#">CCDS30296</a>	<a href="#">Q8BR70</a>	TSL:1 GENCODE basic APPRIS P1
Yipf6-202	<a href="#">ENSMUST00000113811.7</a>	930	<a href="#">236aa</a>	Protein coding	<a href="#">CCDS30296</a>	<a href="#">Q8BR70</a>	TSL:1 GENCODE basic APPRIS P1
Yipf6-206	<a href="#">ENSMUST00000151353.7</a>	690	<a href="#">198aa</a>	Protein coding	-	<a href="#">B1AV66</a>	CDS 3' incomplete TSL:5
Yipf6-203	<a href="#">ENSMUST00000124010.1</a>	284	<a href="#">55aa</a>	Protein coding	-	<a href="#">B1AV65</a>	CDS 3' incomplete TSL:3
Yipf6-205	<a href="#">ENSMUST00000149082.7</a>	2908	No protein	Retained intron	-	-	TSL:1
Yipf6-204	<a href="#">ENSMUST00000140479.1</a>	1020	No protein	Retained intron	-	-	TSL:1

The strategy is based on the design of *Yipf6-201* transcript,The transcription is shown below

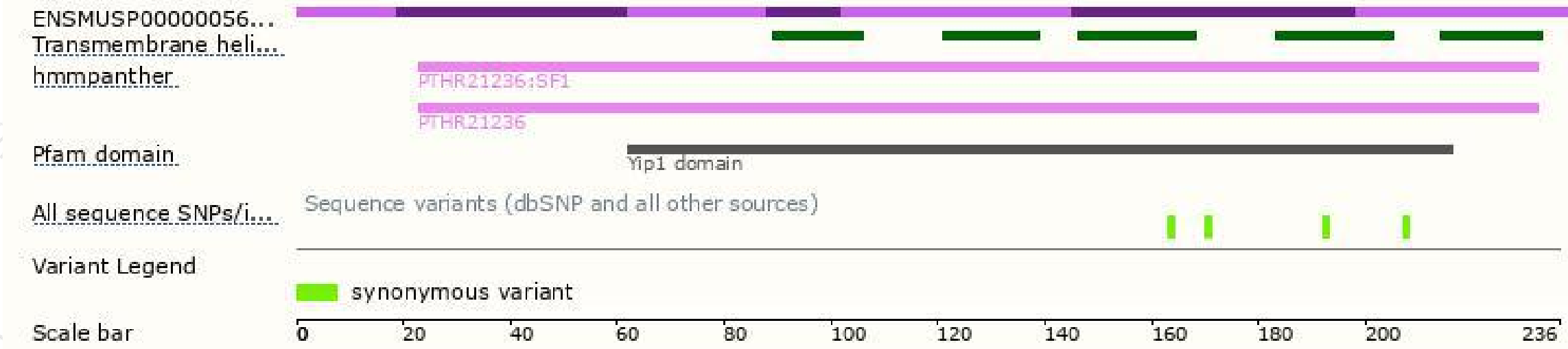


# Genomic location distribution





# 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 or hemizygous for an ENU-induced allele exhibit colitis and increased susceptibility to induced colitis with decreased Paneth and goblet cells.

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

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