

Otud7b Cas9-KO Strategy

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Project Overview

Project Name

Otud7b

Project type

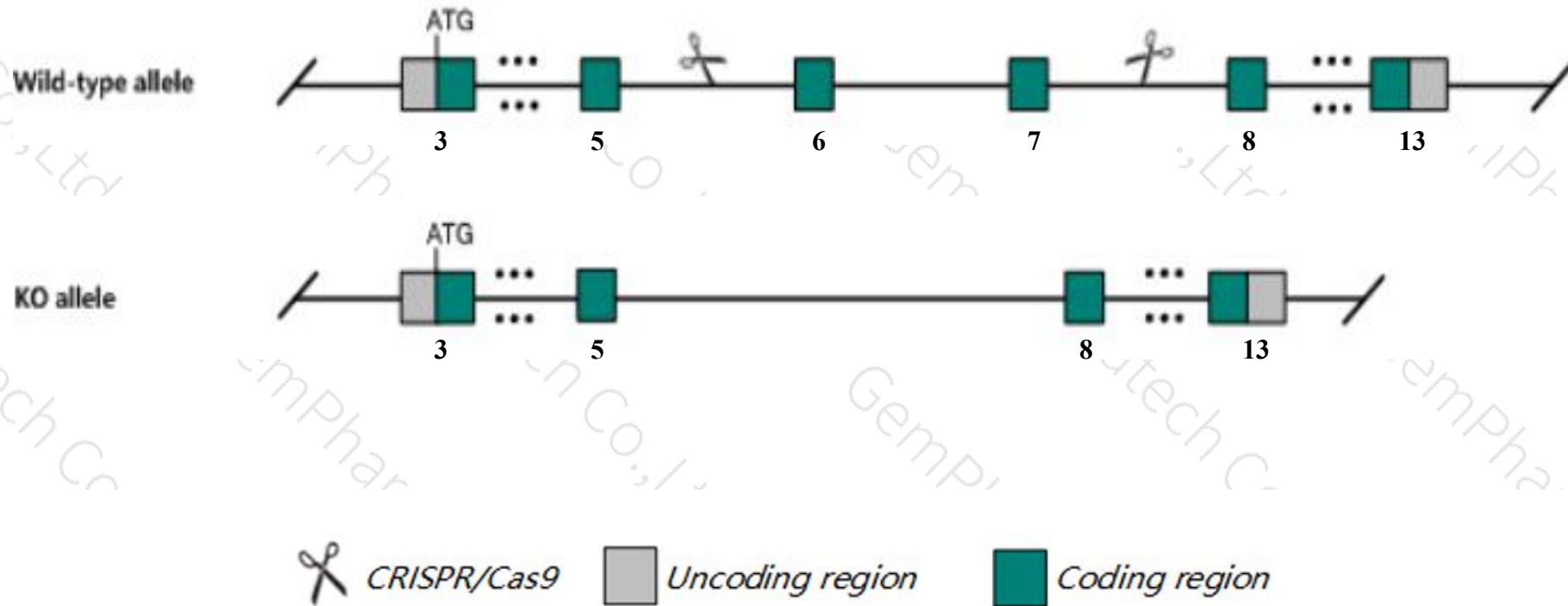
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Otud7b* gene. The schematic diagram is as follows:



- The *Otud7b* gene has 8 transcripts. According to the structure of *Otud7b* gene, exon6-exon7 of *Otud7b*-202 (ENSMUST00000090785.8) transcript is recommended as the knockout region. The region contains 230bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Otud7b* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, mice homozygous for a knock-out allele exhibit decreased body weight, tertiary lymphoid hyperplasia, increased stimulated b cell proliferation and survival and decreased susceptibility to c. rodentium infection.
- The *Otud7b* gene is located on the Chr3. 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)

Otud7b OTU domain containing 7B [Mus musculus (house mouse)]

Gene ID: 229603, updated on 13-Mar-2020

Summary



Official Symbol	Otud7b provided by MGI
Official Full Name	OTU domain containing 7B provided by MGI
Primary source	MGI:MGI:2654703
See related	Ensembl:ENSMUSG00000038495
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	2900060B22Rik, 4930463P07Rik, AI462125, CEZANNE, Travid2, Za20d1
Expression	Ubiquitous expression in testis adult (RPKM 8.7), lung adult (RPKM 6.7) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

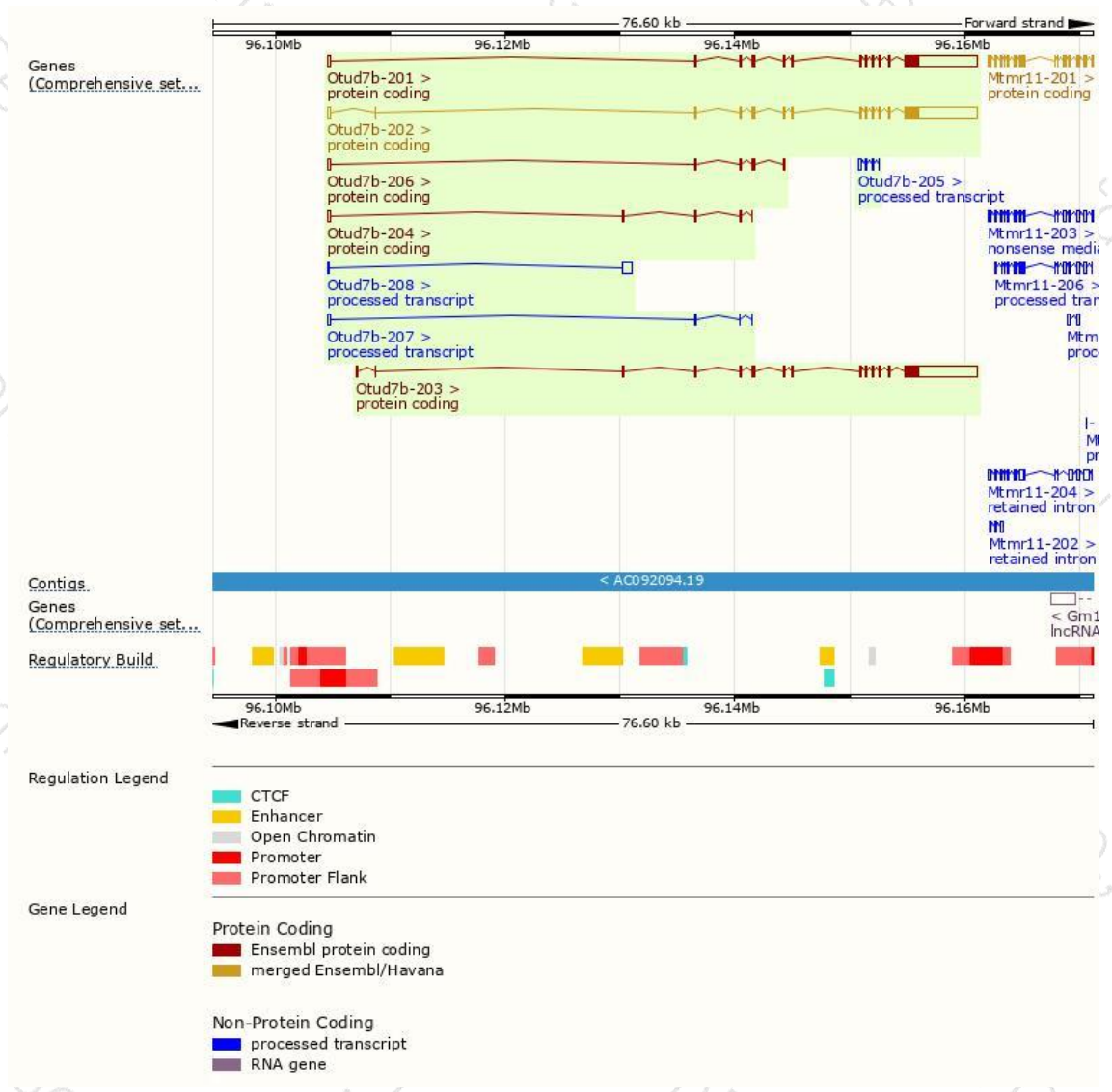
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Otud7b-202	ENSMUST00000090785.8	8101	840aa	Protein coding	CCDS17629	B2RUR8	TSL:1 GENCODE basic APPRIS P1
Otud7b-203	ENSMUST00000098849.2	8046	840aa	Protein coding	CCDS17629	B2RUR8	TSL:5 GENCODE basic APPRIS P1
Otud7b-201	ENSMUST00000035519.11	8043	840aa	Protein coding	CCDS17629	B2RUR8	TSL:1 GENCODE basic APPRIS P1
Otud7b-206	ENSMUST00000138206.7	946	195aa	Protein coding	-	D3Z210	CDS 3' incomplete TSL:3
Otud7b-204	ENSMUST00000132980.7	777	101aa	Protein coding	-	D3YYZ8	CDS 3' incomplete TSL:5
Otud7b-208	ENSMUST00000196172.1	880	No protein	Processed transcript	-	-	TSL:1
Otud7b-205	ENSMUST00000135263.1	600	No protein	Processed transcript	-	-	TSL:3
Otud7b-207	ENSMUST00000146660.1	503	No protein	Processed transcript	-	-	TSL:3

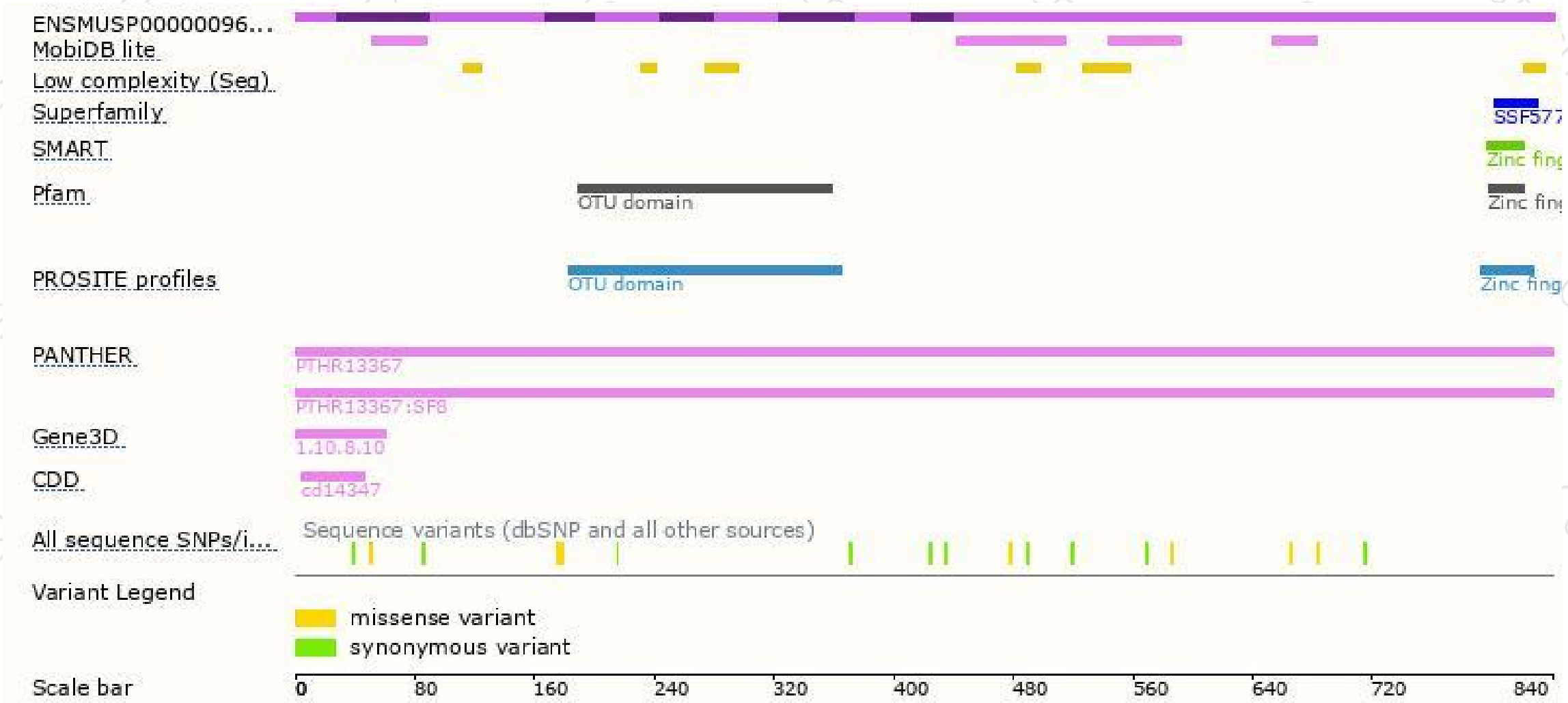
The strategy is based on the design of *Otud7b-202* transcript,the transcription is shown below:



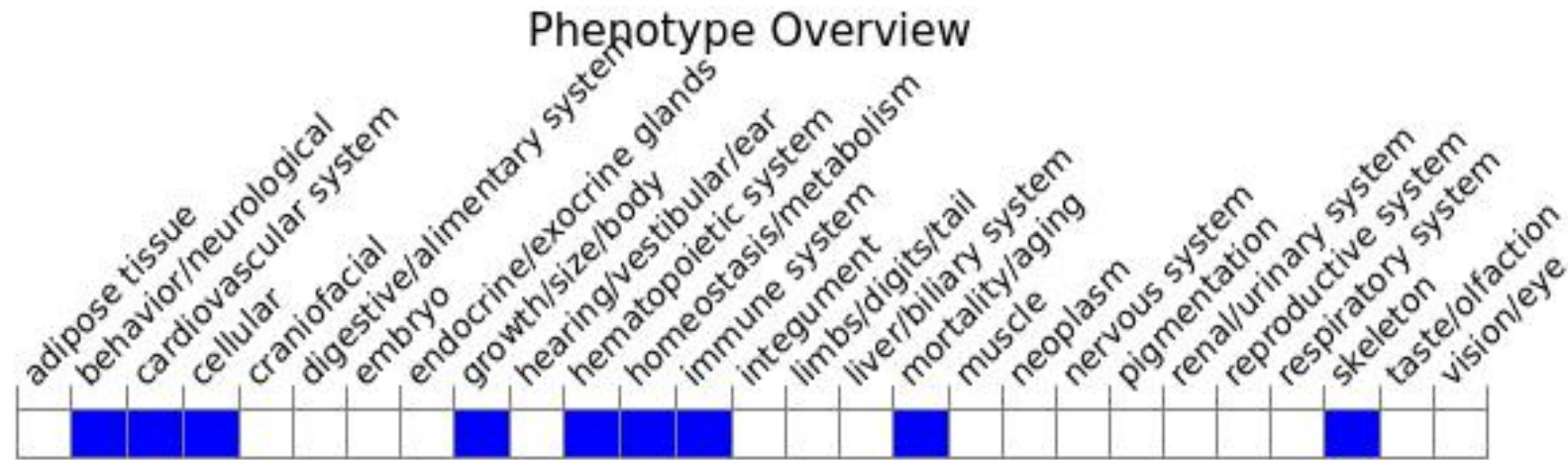
Genomic location distribution



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 decreased body weight, tertiary lymphoid hyperplasia, increased stimulated B cell proliferation and survival and decreased susceptibility to *C. rodentium* infection.

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

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