

Osbp17 Cas9-CKO Strategy

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Project Overview

Project Name

Osbpl7

Project type

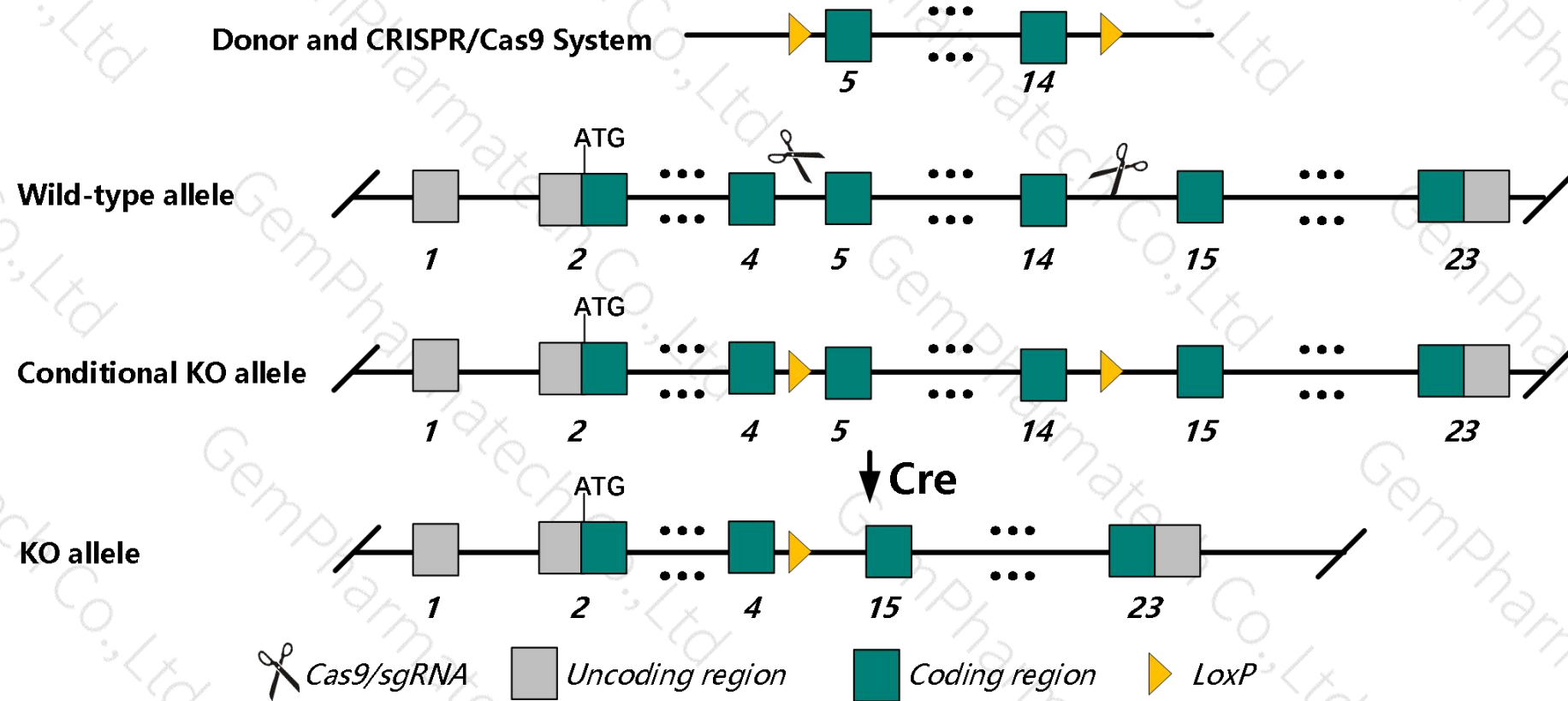
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Osbp17* gene. The schematic diagram is as follows:



- The *Osbpl7* gene has 6 transcripts. According to the structure of *Osbpl7* gene, exon5-exon14 of *Osbpl7*-201(ENSMUST00000090020.12) transcript is recommended as the knockout region. The region contains 1081bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Osbpl7* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA and Donor 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.
- The flox mice was knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

- The *Osbpl7* gene is located on the Chr11. 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.
- Transcript *Osbpl7*-202&204&205 may not be affected.
- Transcript *Osbpl7*-203 may be destroyed directly.
- The floxed region is near to the N-terminal of *Gm11574* gene and *Mir8103* gene, this strategy may influence the regulatory function of the N-terminal of these genes.
- This strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risk of loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Osbpl7 oxysterol binding protein-like 7 [Mus musculus (house mouse)]

Gene ID: 71240, updated on 13-Mar-2020

Summary



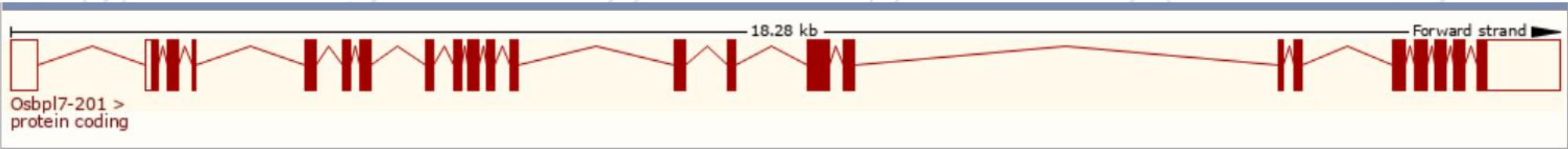
Official Symbol	Osbpl7 provided by MGI
Official Full Name	oxysterol binding protein-like 7 provided by MGI
Primary source	MGI:MGI:1918490
See related	Ensembl:ENSMUSG00000038534
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4933437E18Rik
Expression	Ubiquitous expression in colon adult (RPKM 18.6), testis adult (RPKM 16.6) and 27 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

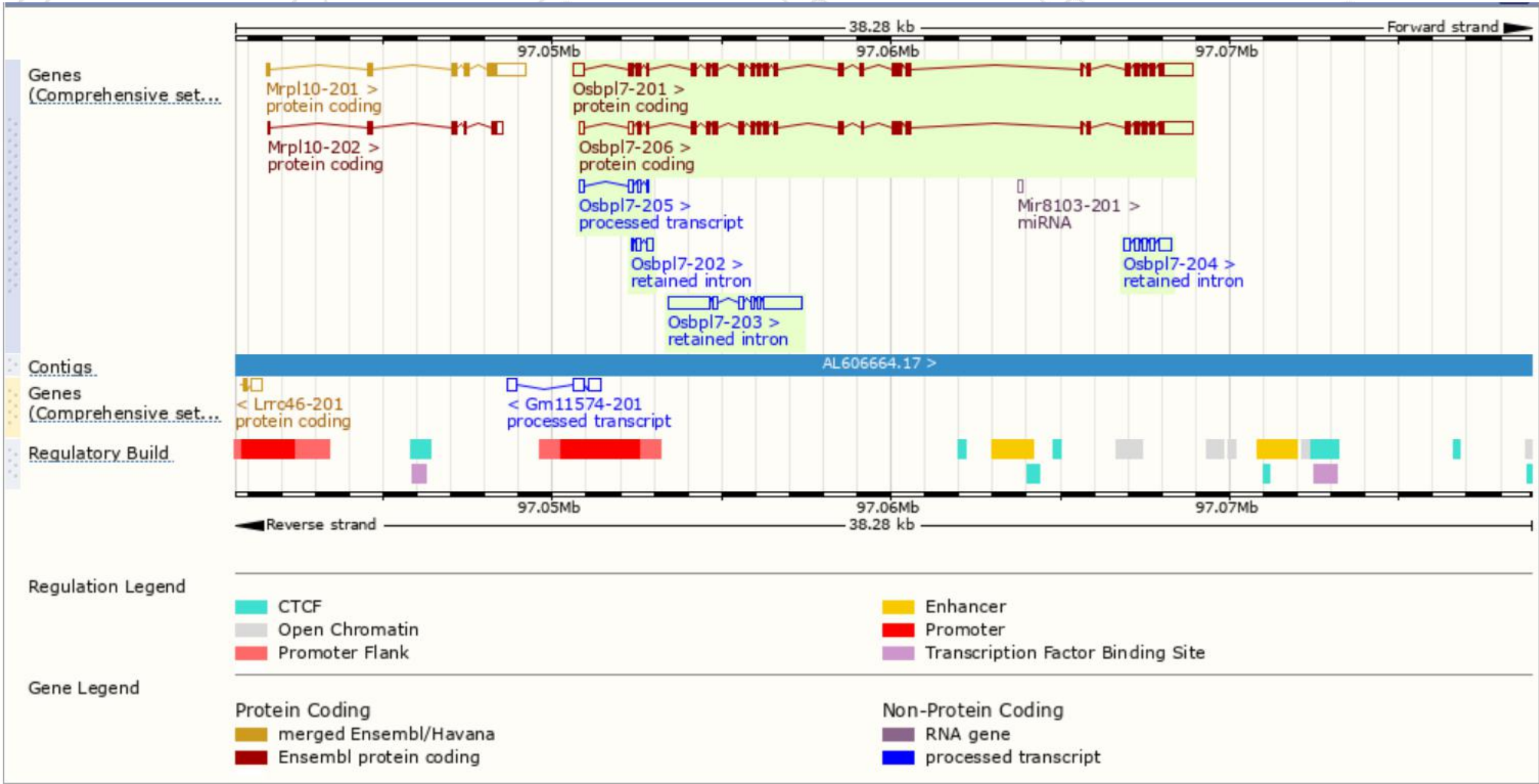
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Osbpl7-201	ENSMUST00000090020.12	3771	837aa	Protein coding	-	A2A716	TSL:1 GENCODE basic APPRIS P5
Osbpl7-206	ENSMUST00000168565.1	3535	791aa	Protein coding	-	F8VQM4	TSL:5 GENCODE basic APPRIS ALT2
Osbpl7-205	ENSMUST00000154084.7	425	No protein	Processed transcript	-	-	TSL:2
Osbpl7-203	ENSMUST00000142406.1	2783	No protein	Retained intron	-	-	TSL:1
Osbpl7-204	ENSMUST00000143360.1	920	No protein	Retained intron	-	-	TSL:1
Osbpl7-202	ENSMUST00000142399.1	383	No protein	Retained intron	-	-	TSL:3

The strategy is based on the design of *Osbpl7-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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