

Osbbpl2 Cas9-CKO Strategy

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Project Overview

Project Name

Osbpl2

Project type

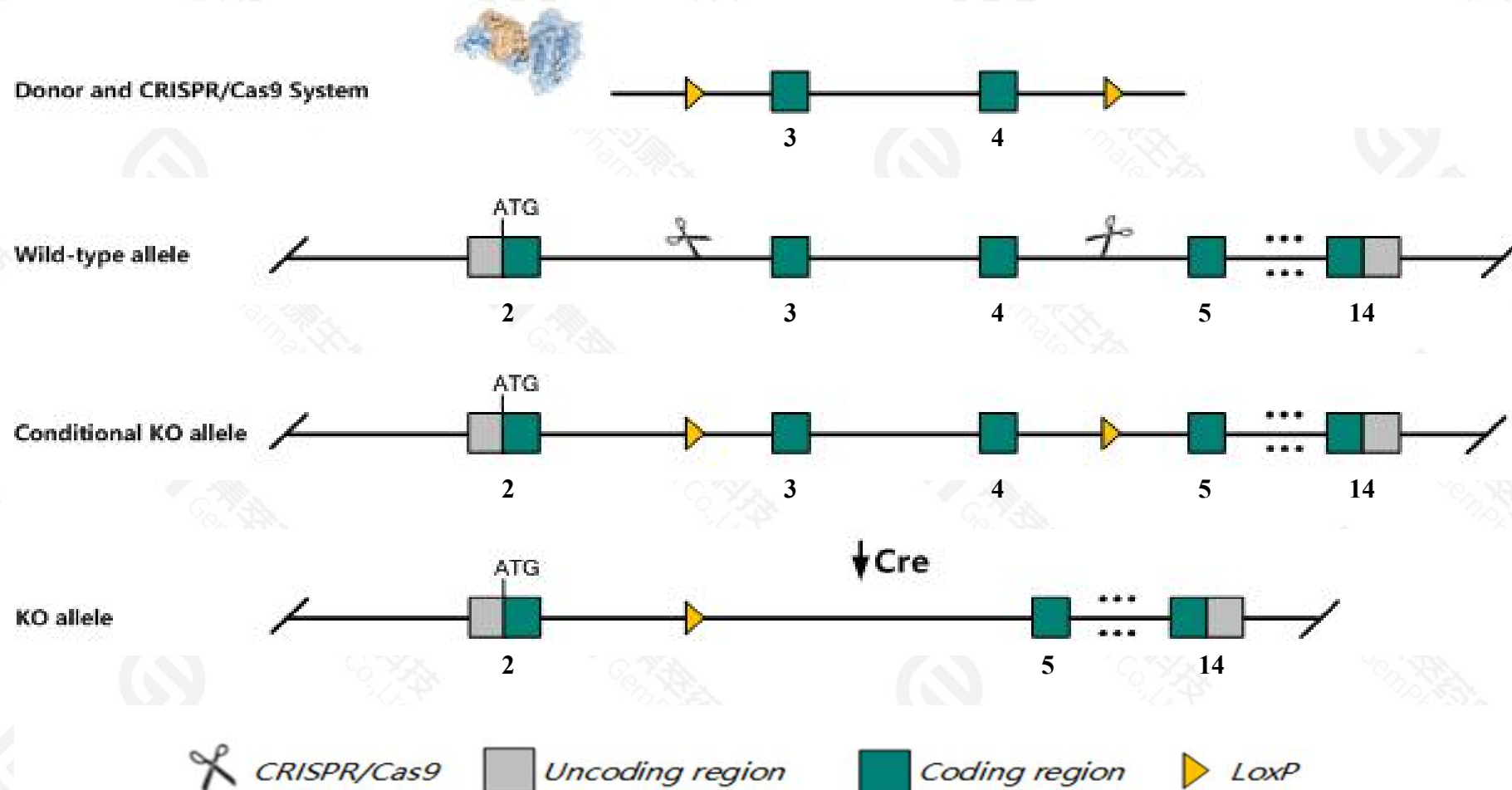
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Osbpl2* gene. The schematic diagram is as follows:



- The *Osbp12* gene has 4 transcripts. According to the structure of *Osbp12* gene, exon3-exon4 of *Osbp12*-201(ENSMUST00000040668.9) transcript is recommended as the knockout region. The region contains 221bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Osbp12* gene. The brief process is as follows: CRISPR/Cas9 system 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 will be 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 *Osbp12* gene is located on the Chr2. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Osbp12 oxysterol binding protein-like 2 [Mus musculus (house mouse)]

Gene ID: 228983, updated on 22-Nov-2020

Summary



Official Symbol Osbp12 provided by [MGI](#)

Official Full Name oxysterol binding protein-like 2 provided by [MGI](#)

Primary source [MGI:MGI:2442832](#)

See related [Ensembl:ENSMUSG00000039050](#)

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 C130070J12Rik, OR, ORP-2, Orp2

Expression Ubiquitous expression in bladder adult (RPKM 29.7), genital fat pad adult (RPKM 20.6) and 28 other tissues [See more](#)

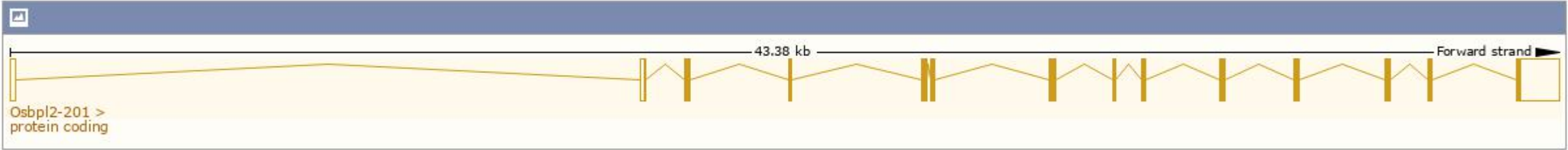
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

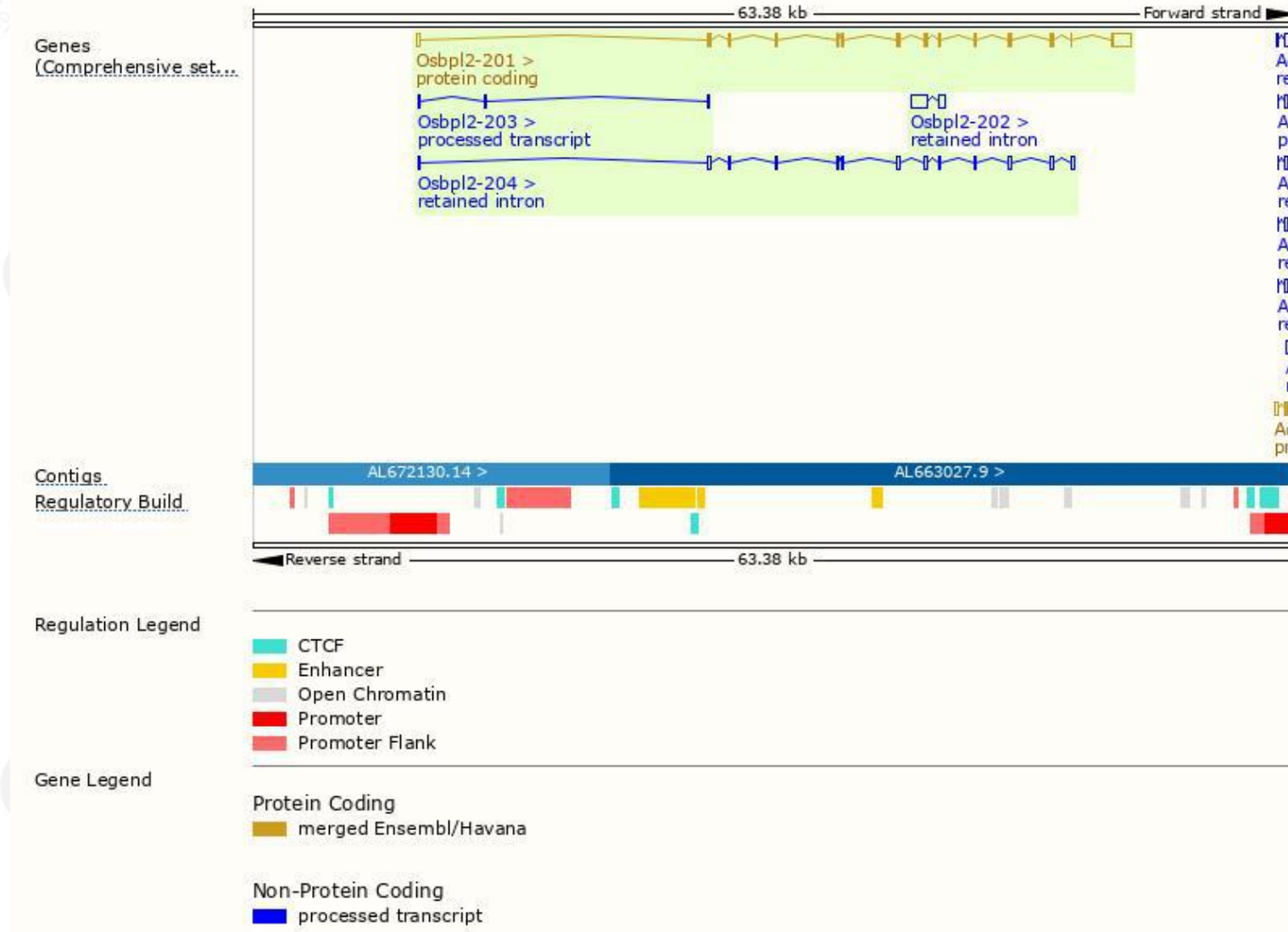
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Osbpl2-201	ENSMUST00000040668.9	2805	484aa	Protein coding	CCDS17170		TSL:1 , GENCODE basic , APPRIS P1 ,
Osbpl2-203	ENSMUST00000140210.2	348	No protein	Processed transcript	-		TSL:3 ,
Osbpl2-204	ENSMUST00000142376.2	1688	No protein	Retained intron	-		TSL:1 ,
Osbpl2-202	ENSMUST00000124225.2	1301	No protein	Retained intron	-		TSL:1 ,

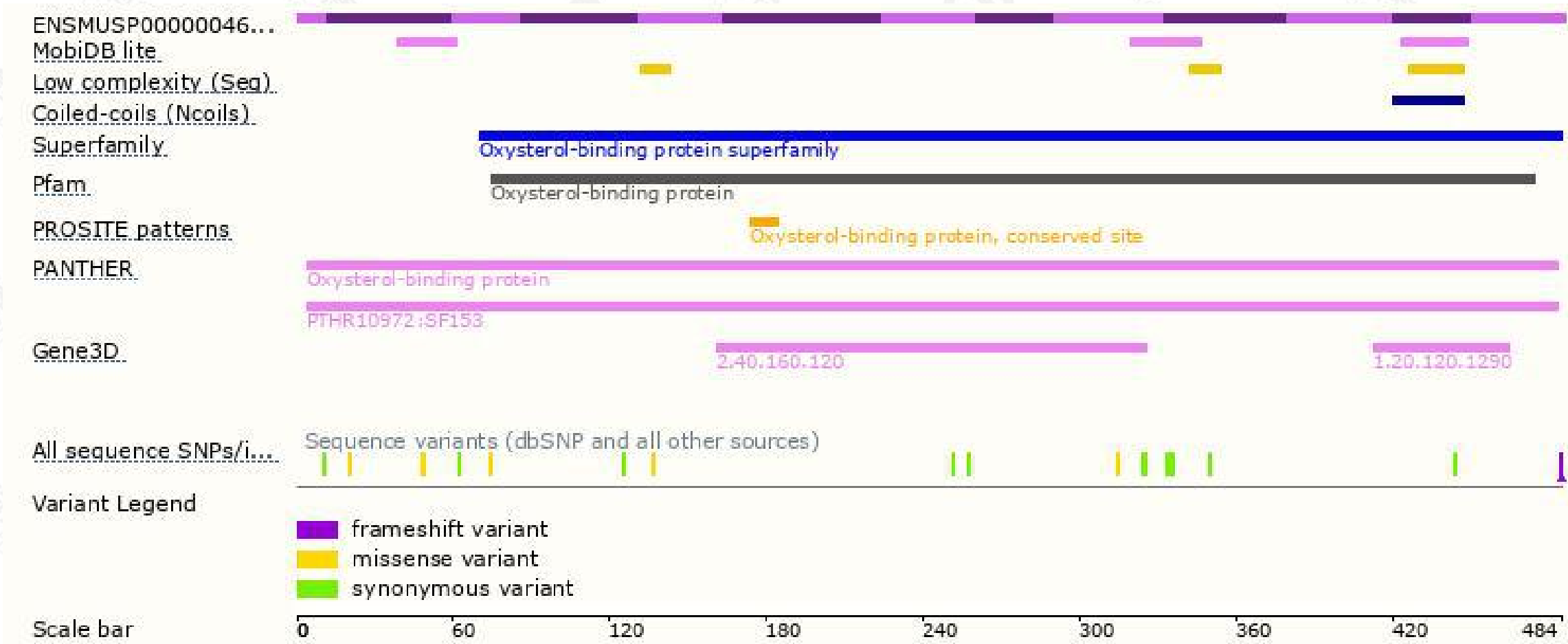
The strategy is based on the design of *Osbpl2-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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