

Ube2v1 Cas9-CKO Strategy

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Project Overview

Project Name

Ube2v1

Project type

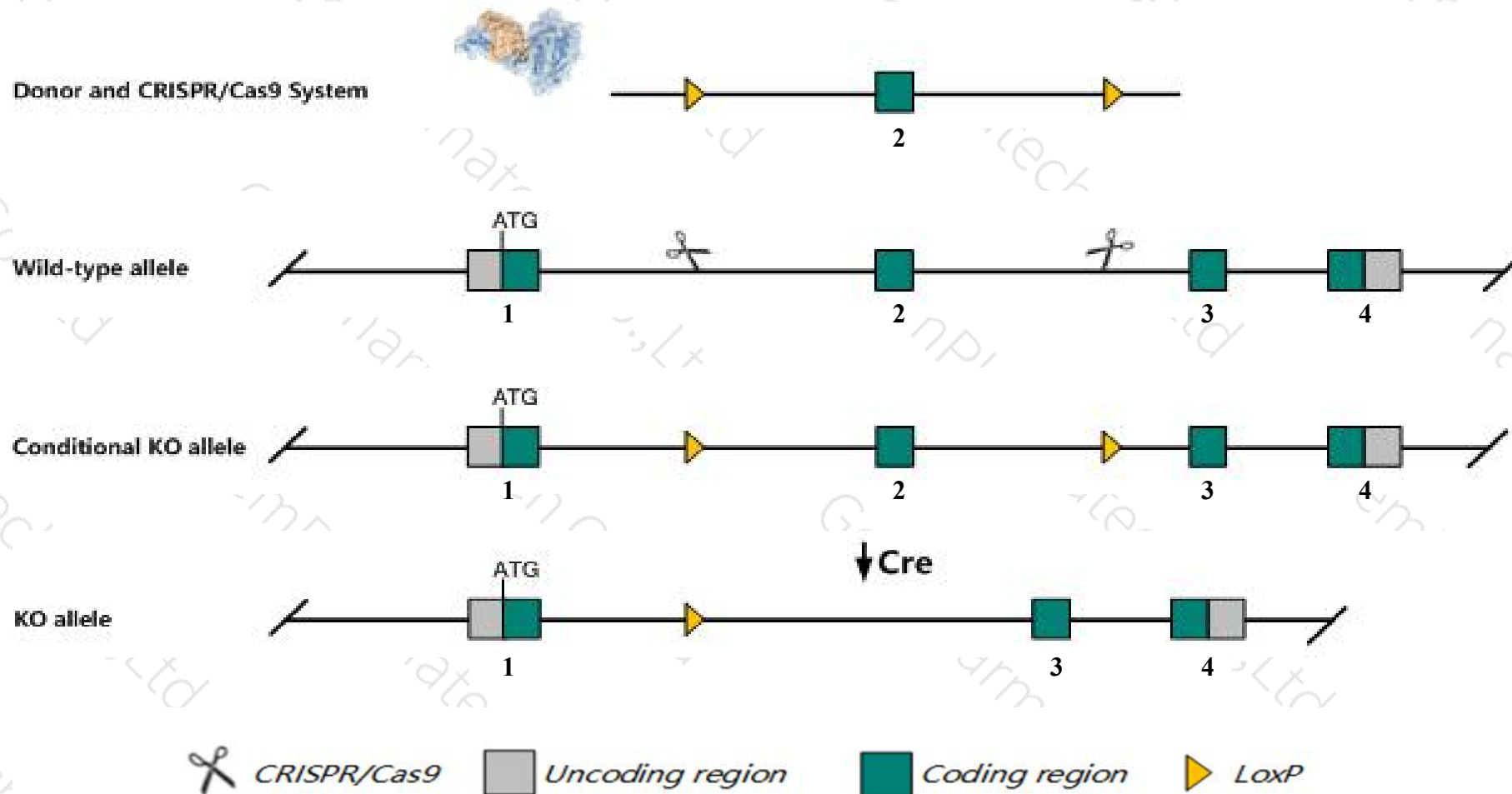
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ube2v1* gene. The schematic diagram is as follows:



- The *Ube2v1* gene has 7 transcripts. According to the structure of *Ube2v1* gene, exon2 of *Ube2v1-202* (ENSMUST00000109207.9) transcript is recommended as the knockout region. The region contains 149bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ube2v1* 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 *Ube2v1* 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.
- Transcript *Ube2v1-205* may not be affected.
- *Gm20431* gene will be disrupted together in this strategy.
- 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)

Ube2v1 ubiquitin-conjugating enzyme E2 variant 1 [Mus musculus (house mouse)]

Gene ID: 66589, updated on 31-Jan-2019

Summary



Official Symbol	Ube2v1 provided by MGI
Official Full Name	ubiquitin-conjugating enzyme E2 variant 1 provided by MGI
Primary source	MGI:MGI:1913839
See related	Ensembl:ENSMUSG00000078923
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	0610011J09Rik, AI256840, CROC-1, CROC1, D7Bwg1382e, UEV-1
Expression	Ubiquitous expression in stomach adult (RPKM 69.4), frontal lobe adult (RPKM 57.7) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

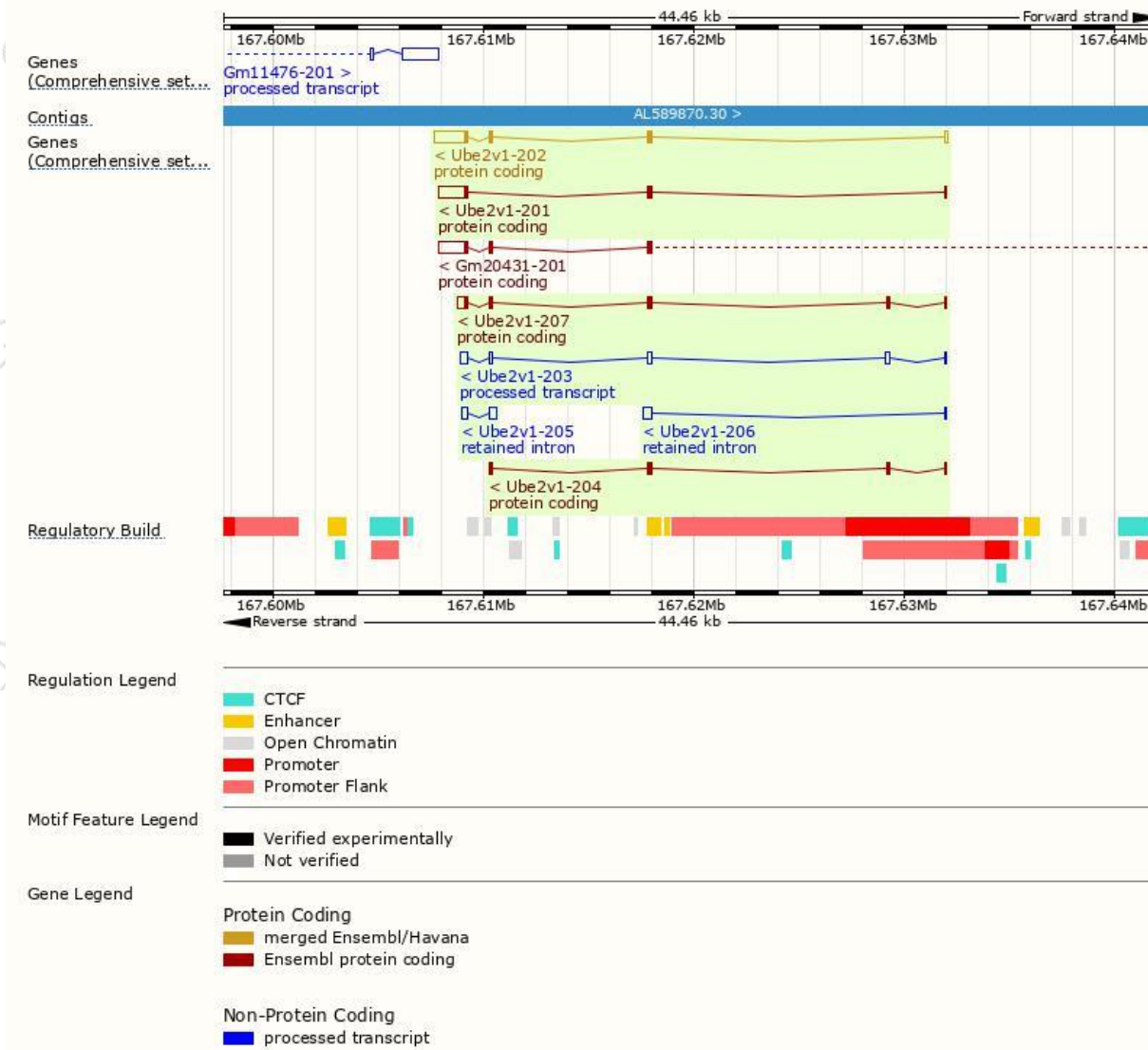
The gene has 7 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ube2v1-202	ENSMUST00000109207.9	2041	147aa	Protein coding	CCDS17103	Q569Y6 Q9CZY3	TSL:1 GENCODE basic APPRIS P1
Ube2v1-201	ENSMUST00000060645.12	1586	105aa	Protein coding	CCDS79869	Q9CZY3	TSL:1 GENCODE basic
Ube2v1-207	ENSMUST00000151365.7	924	173aa	Protein coding	CCDS79868	B7ZBY7	TSL:2 GENCODE basic
Ube2v1-204	ENSMUST00000140216.1	433	124aa	Protein coding	-	B7ZBY6	CDS 3' incomplete TSL:3
Ube2v1-203	ENSMUST00000130284.1	836	No protein	Processed transcript	-	-	TSL:5
Ube2v1-205	ENSMUST00000144628.1	647	No protein	Retained intron	-	-	TSL:1
Ube2v1-206	ENSMUST00000144830.1	433	No protein	Retained intron	-	-	TSL:2

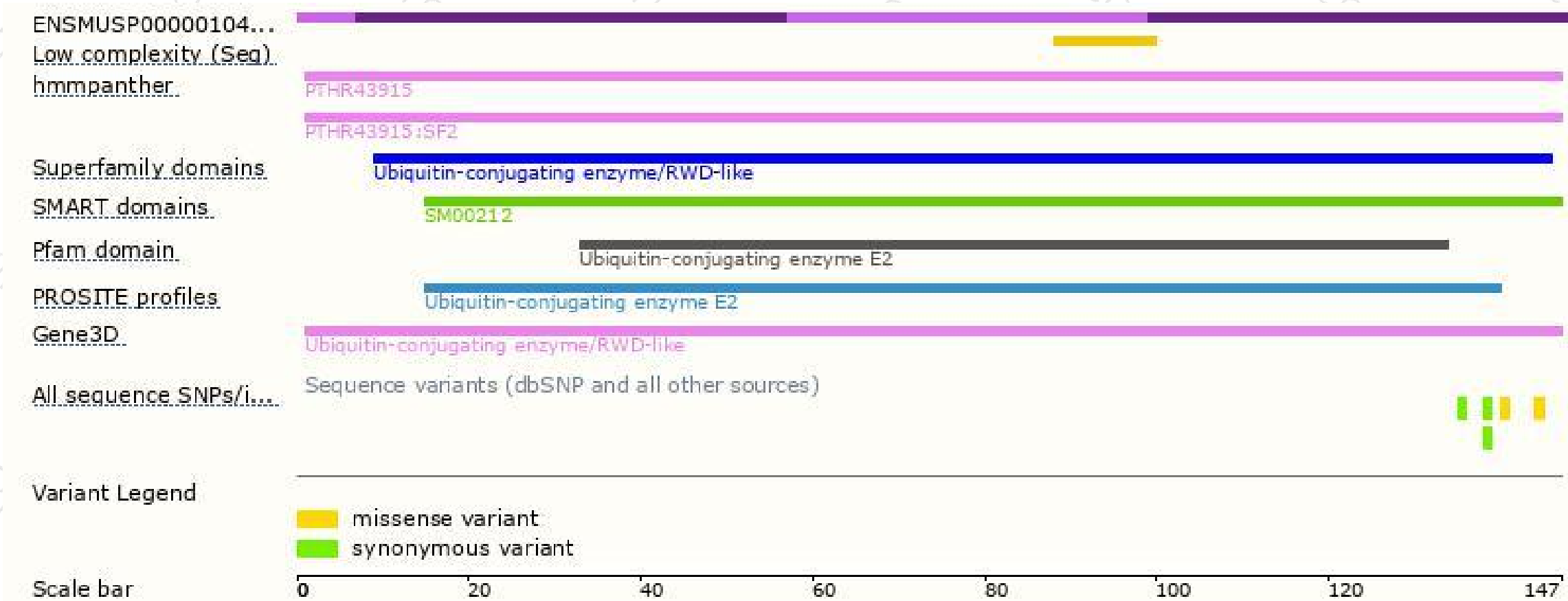
The strategy is based on the design of *Ube2v1-202* transcript, The transcription is shown below



Genomic location distribution



Protein domain



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

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