

Ube2e1 Cas9-CKO Strategy

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Project Overview



Project Name

Ube2e1

Project type

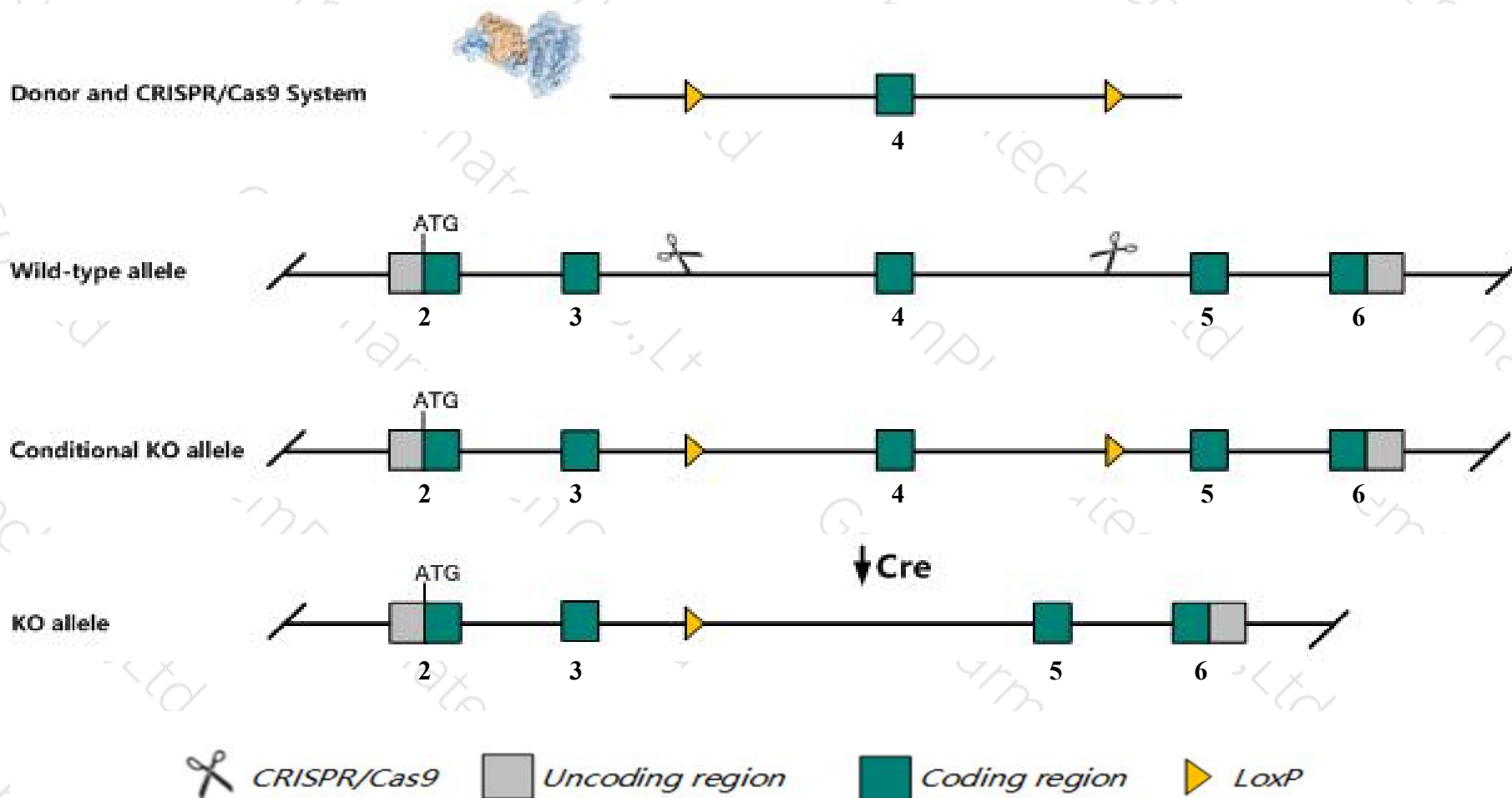
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ube2e1* gene. The schematic diagram is as follows:



- The *Ube2e1* gene has 5 transcripts. According to the structure of *Ube2e1* gene, exon4 of *Ube2e1-201* (ENSMUST00000022296.6) transcript is recommended as the knockout region. The region contains 133bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ube2e1* 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 *Ube2e1* gene is located on the Chr14. 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 may affect the regulation of the 3' ends of *Nkiras1-202* gene.
- 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)

Ube2e1 ubiquitin-conjugating enzyme E2E 1 [Mus musculus (house mouse)]

Gene ID: 22194, updated on 31-Jan-2019

Summary

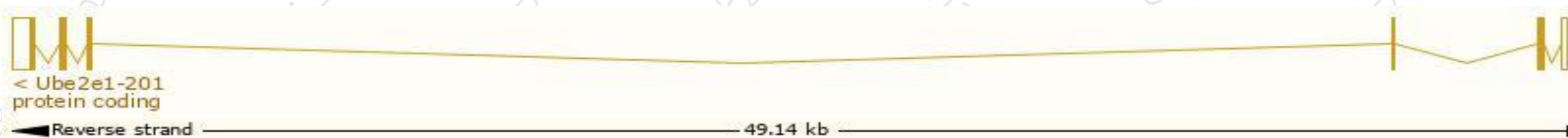
Official Symbol	Ube2e1 provided by MGI
Official Full Name	ubiquitin-conjugating enzyme E2E 1 provided by MGI
Primary source	MGI:MGI:107411
See related	Ensembl:ENSMUSG000000021774
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	UbcM3, Ubce5, ubcM2
Expression	Ubiquitous expression in CNS E18 (RPKM 35.6), CNS E14 (RPKM 32.6) and 27 other tissues See more

Transcript information (Ensembl)

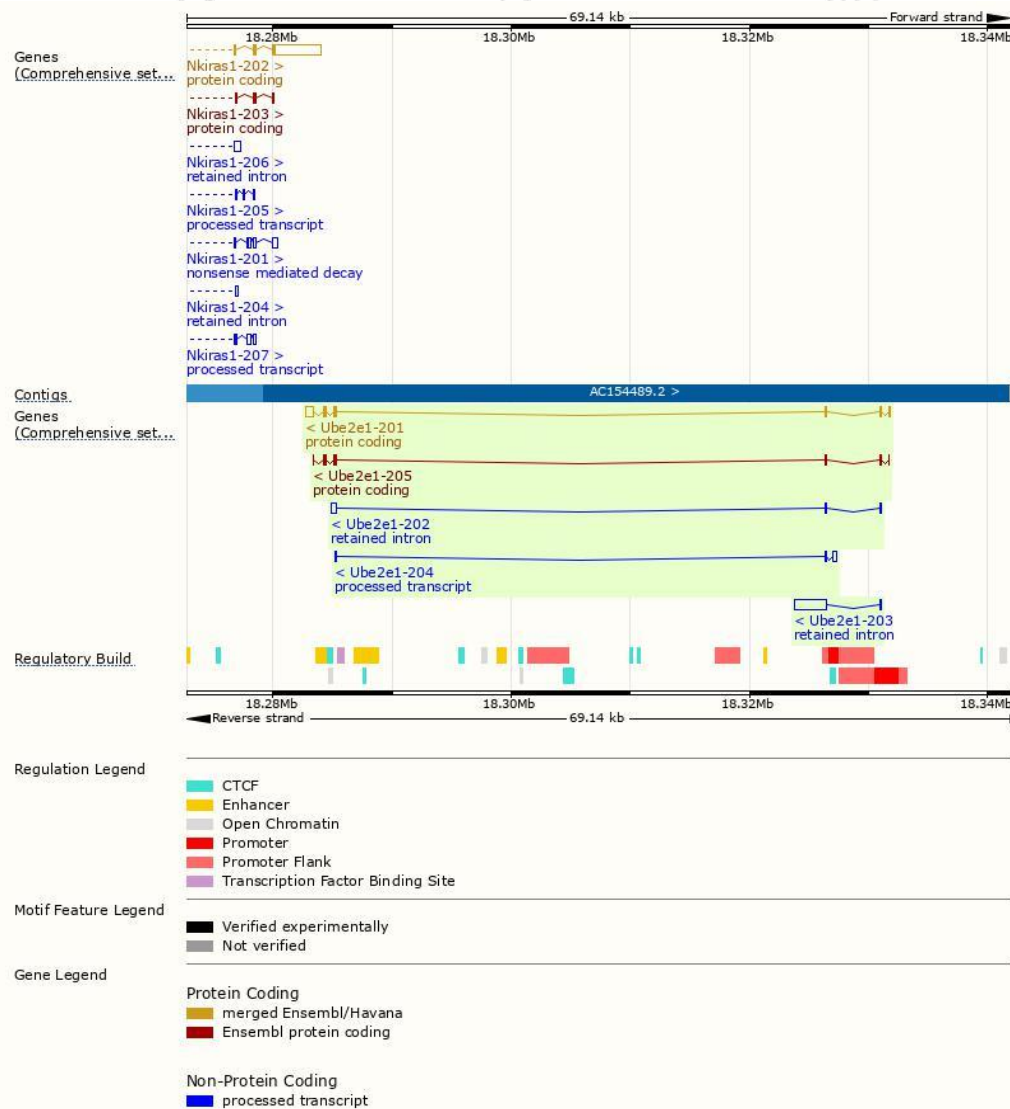
The gene has 5 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ube2e1-201	ENSMUST00000022296.6	1408	193aa	Protein coding	CCDS26837	P52482 Q541Z5	TSL:1 GENCODE basic APPRIS P1
Ube2e1-205	ENSMUST00000225612.1	550	148aa	Protein coding	-	A0A286YE31	CDS 3' incomplete
Ube2e1-204	ENSMUST00000162831.1	370	No protein	Processed transcript	-	-	TSL:2
Ube2e1-203	ENSMUST00000161580.1	2762	No protein	Retained intron	-	-	TSL:2
Ube2e1-202	ENSMUST00000160266.7	492	No protein	Retained intron	-	-	TSL:2

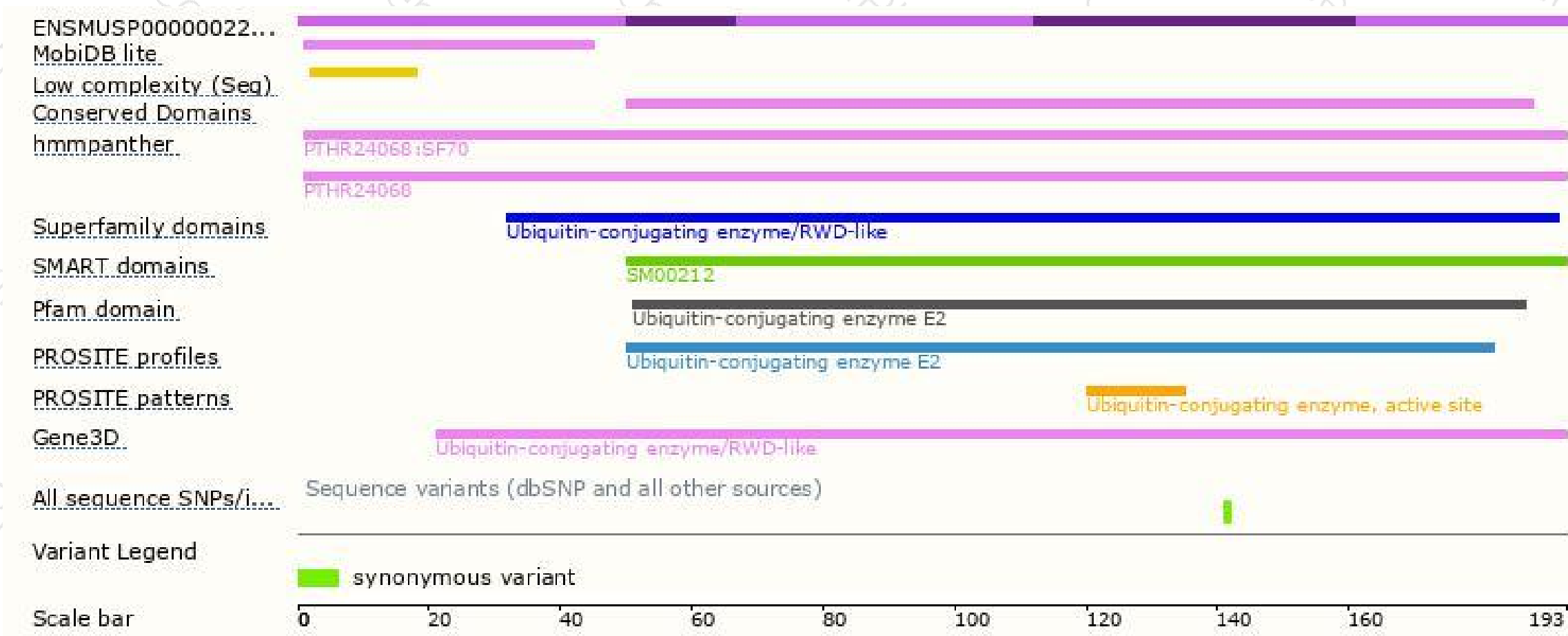
The strategy is based on the design of *Ube2e1-201* transcript, The transcription is shown below



Genomic location distribution



Protein domain



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

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