

Ubqln4 Cas9-CKO Strategy

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Reviewer:

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Design Date:

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Project Overview

Project Name

Ubqln4

Project type

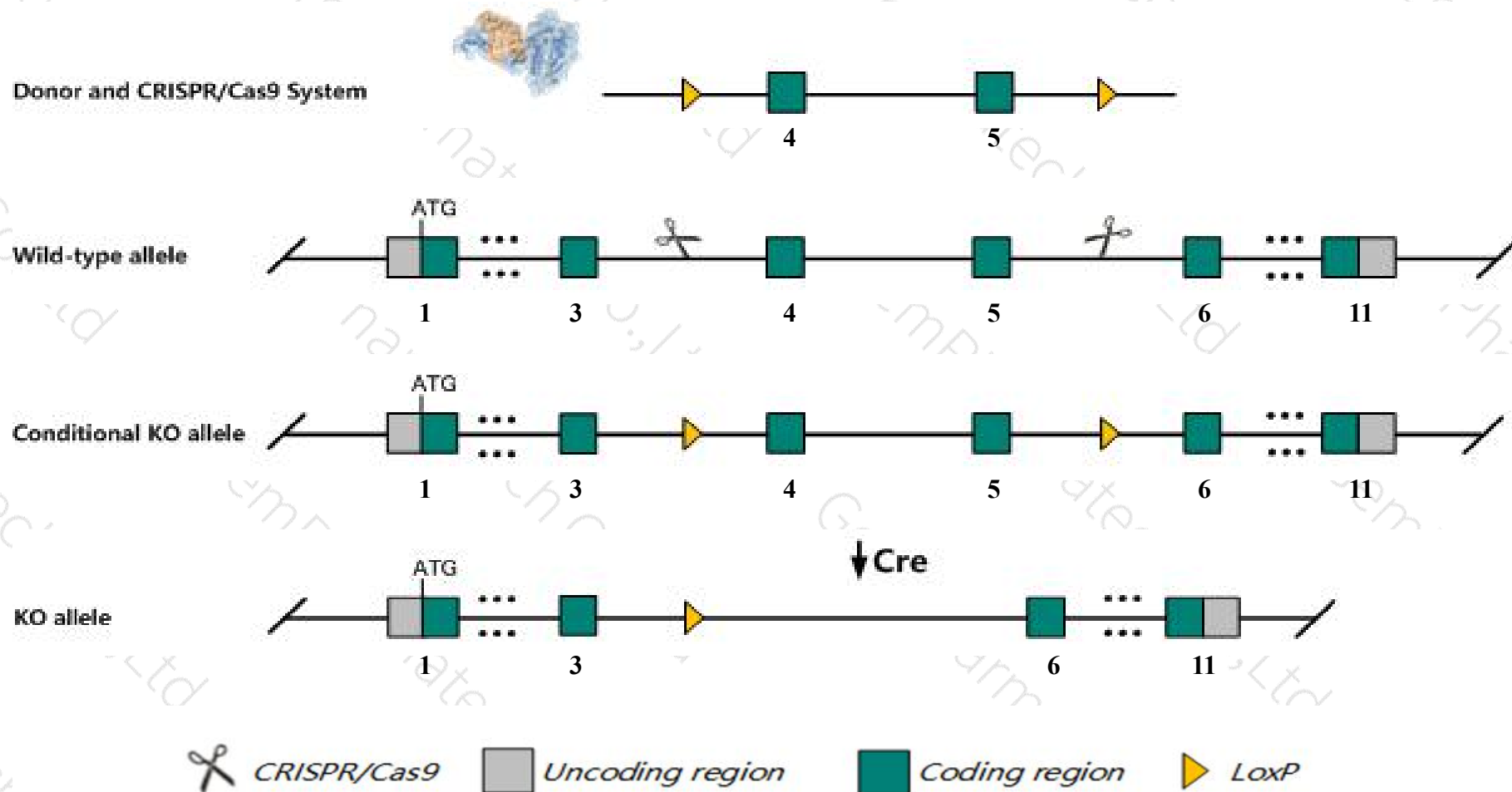
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ubqln4* gene. The schematic diagram is as follows:



- The *Ubqln4* gene has 5 transcripts. According to the structure of *Ubqln4* gene, exon4-exon5 of *Ubqln4-201* (ENSMUST00000008748.7) transcript is recommended as the knockout region. The region contains 422bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ubqln4* 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.

Notice

- The *Ubqln4* 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.
- Some amino acids will remain at the N-terminus and some functions may be retained.
- 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)

Ubqln4 ubiquilin 4 [Mus musculus (house mouse)]

Gene ID: 94232, updated on 31-Jan-2019

Summary



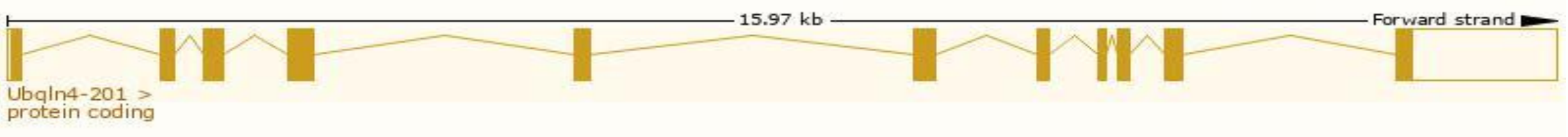
Official Symbol	Ubqln4 provided by MGI
Official Full Name	ubiquilin 4 provided by MGI
Primary source	MGI:MGI:2150152
See related	Ensembl:ENSMUSG00000008604
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	A1Up, A1u, A1663987, CIP75, UBIN
Expression	Ubiquitous expression in adrenal adult (RPKM 35.7), ovary adult (RPKM 34.6) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

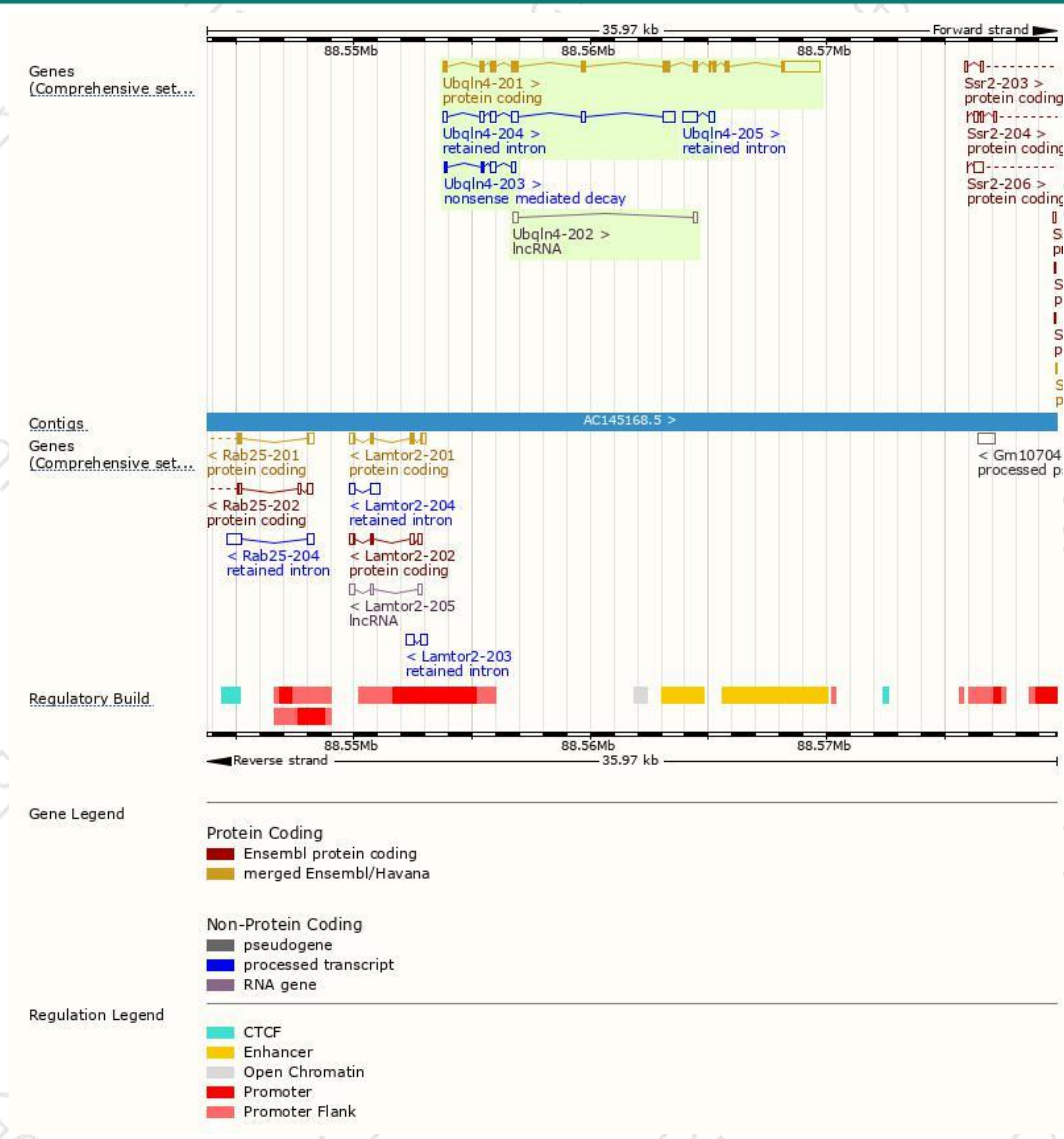
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ubqln4-201	ENSMUST00000008748.7	3330	596aa	Protein coding	CCDS17479	Q99NB8	TSL:1 GENCODE basic APPRIS P1
Ubqln4-203	ENSMUST00000192962.1	590	45aa	Nonsense mediated decay	-	A0A0A6YXU5	TSL:3
Ubqln4-204	ENSMUST00000194303.5	1379	No protein	Retained intron	-	-	TSL:1
Ubqln4-205	ENSMUST00000195498.1	871	No protein	Retained intron	-	-	TSL:3
Ubqln4-202	ENSMUST00000192687.1	362	No protein	lncRNA	-	-	TSL:5

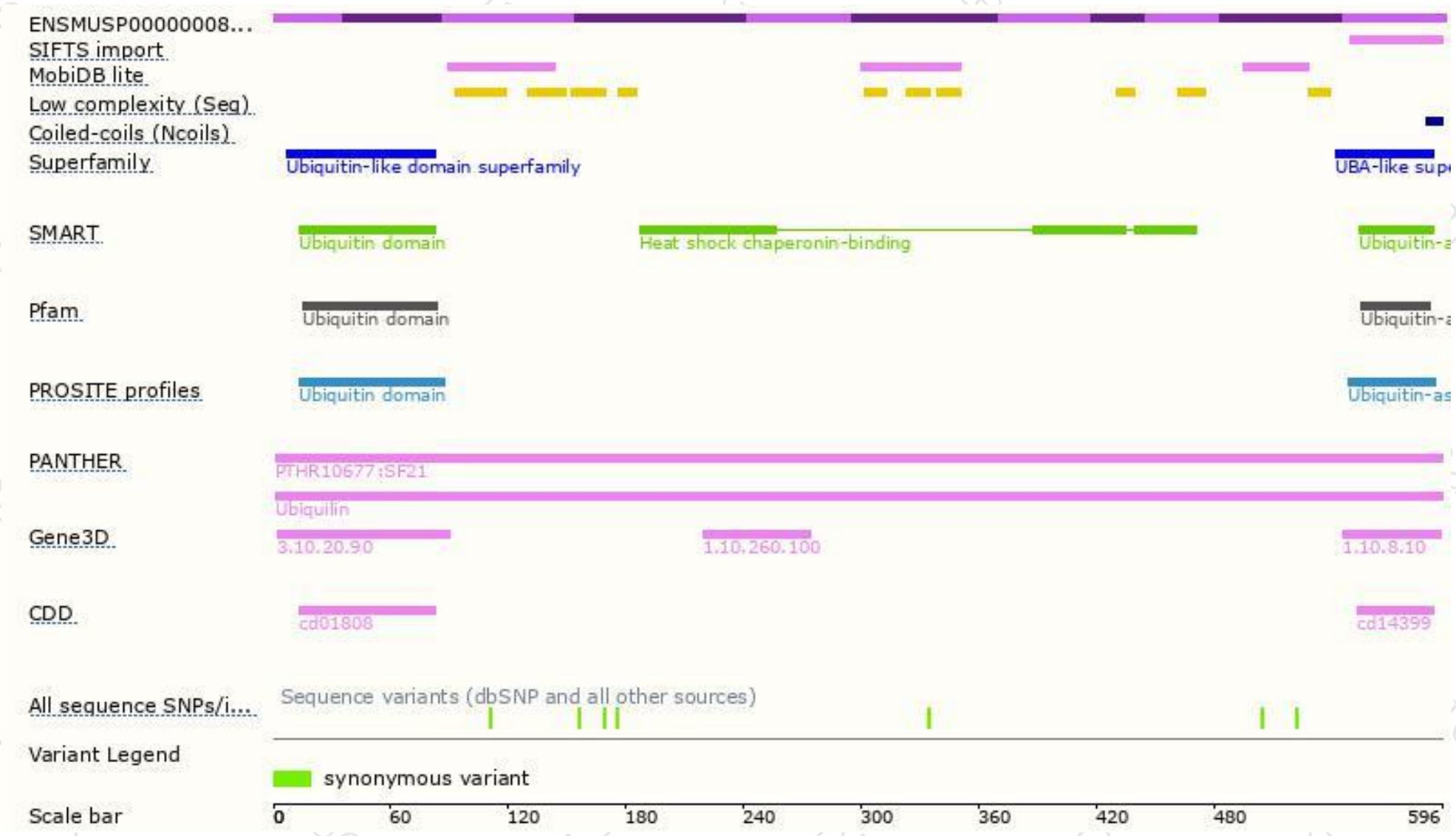
The strategy is based on the design of *Ubqln4-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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