

Usp30 Cas9-CKO Strategy

Designer: Yanhua Shen

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Project Overview

Project Name

Usp30

Project type

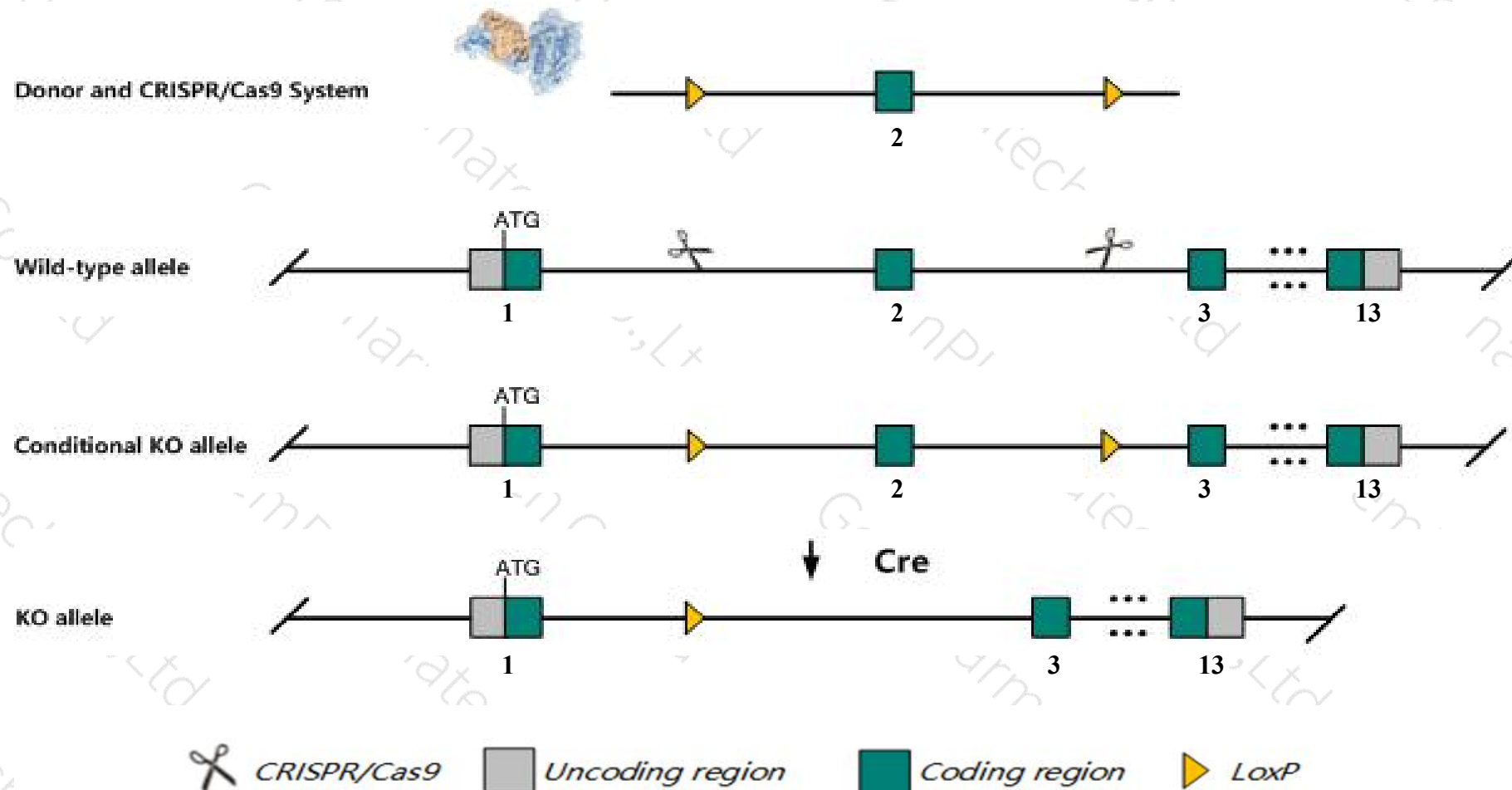
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Usp30* gene. The schematic diagram is as follows:



- The *Usp30* gene has 7 transcripts. According to the structure of *Usp30* gene, exon2 of *Usp30-201* (ENSMUST00000031588.11) transcript is recommended as the knockout region. The region contains 110bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Usp30* 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 *Usp30* gene is located on the Chr5. 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)

Usp30 ubiquitin specific peptidase 30 [Mus musculus (house mouse)]

Gene ID: 100756, updated on 31-Jan-2019

Summary



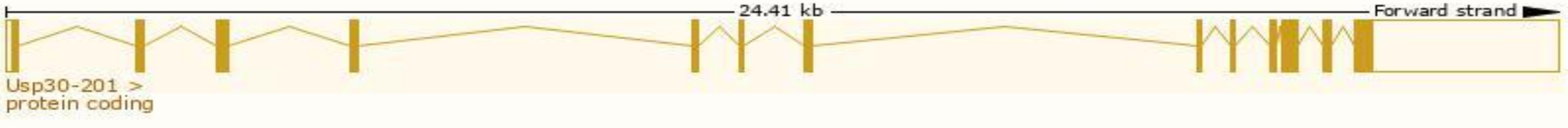
Official Symbol	Usp30 provided by MGI
Official Full Name	ubiquitin specific peptidase 30 provided by MGI
Primary source	MGI:MGI:2140991
See related	Ensembl:ENSMUSG00000029592
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	6330590F17Rik, A1851327, D5Etd483e
Expression	Ubiquitous expression in adrenal adult (RPKM 14.2), ovary adult (RPKM 13.5) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

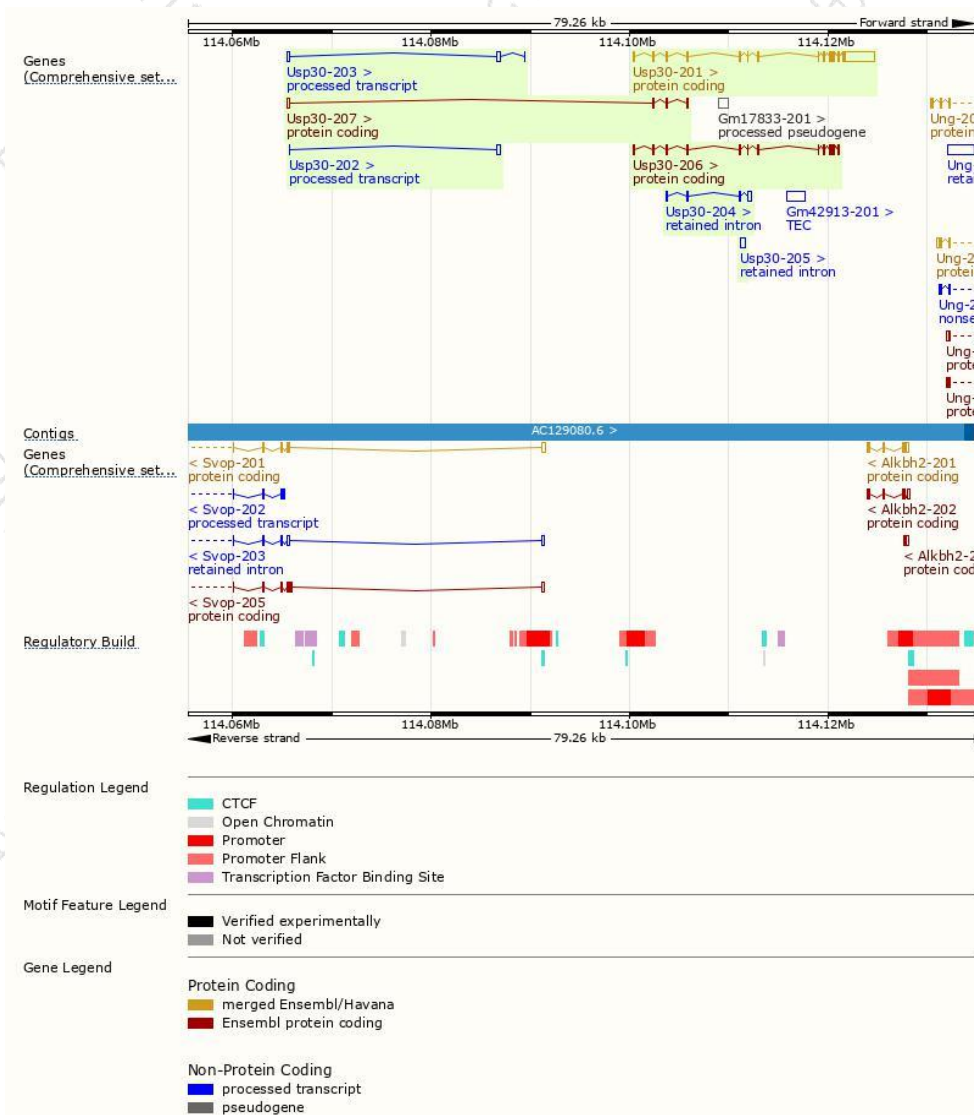
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Usp30-201	ENSMUST00000031588.11	4604	517aa	Protein coding	CCDS19558	Q3UN04	TSL:1 GENCODE basic APPRIS P1
Usp30-206	ENSMUST00000200119.2	1303	410aa	Protein coding	-	A0A0G2JDF7	CDS 3' incomplete TSL:5
Usp30-207	ENSMUST00000202603.3	652	144aa	Protein coding	-	A0A0J9YV73	CDS 3' incomplete TSL:5
Usp30-203	ENSMUST00000162506.1	588	No protein	Processed transcript	-	-	TSL:3
Usp30-202	ENSMUST00000160164.1	305	No protein	Processed transcript	-	-	TSL:5
Usp30-204	ENSMUST00000196574.1	768	No protein	Retained intron	-	-	TSL:3
Usp30-205	ENSMUST00000198457.1	520	No protein	Retained intron	-	-	TSL:NA

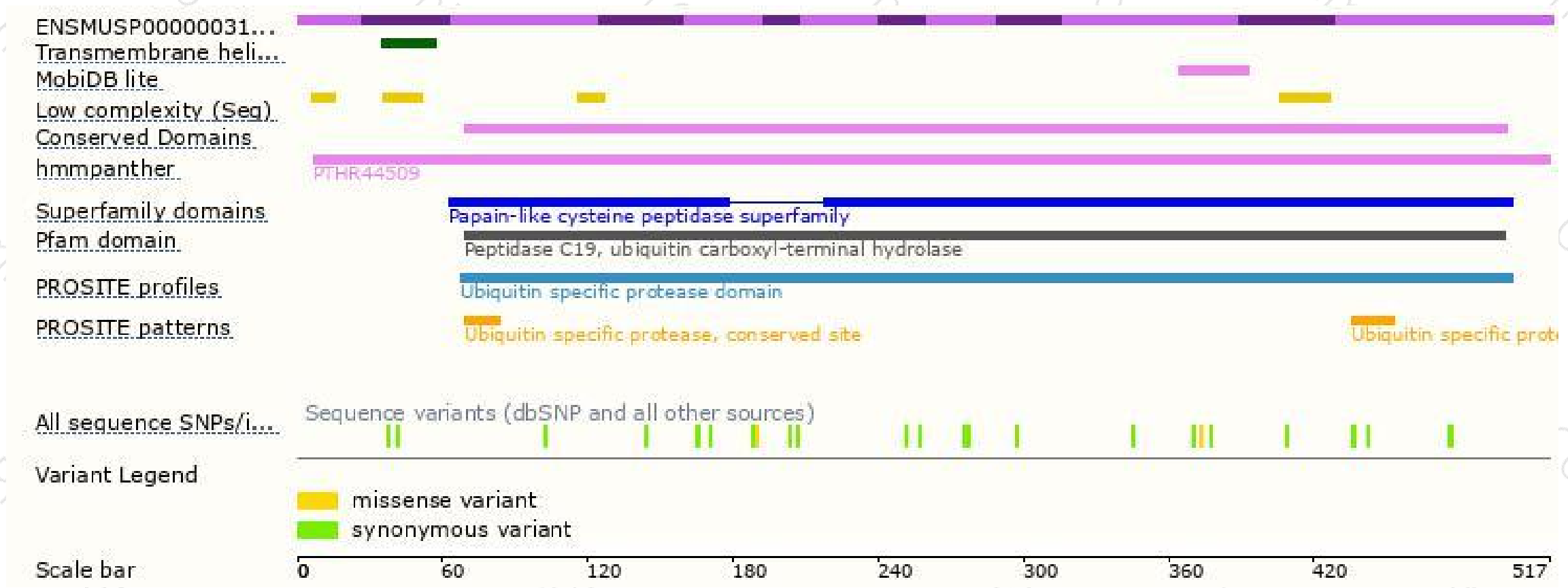
The strategy is based on the design of *Usp30-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

