

Ubp2 Cas9-KO Strategy

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Project Overview

Project Name

Ubap2

Project type

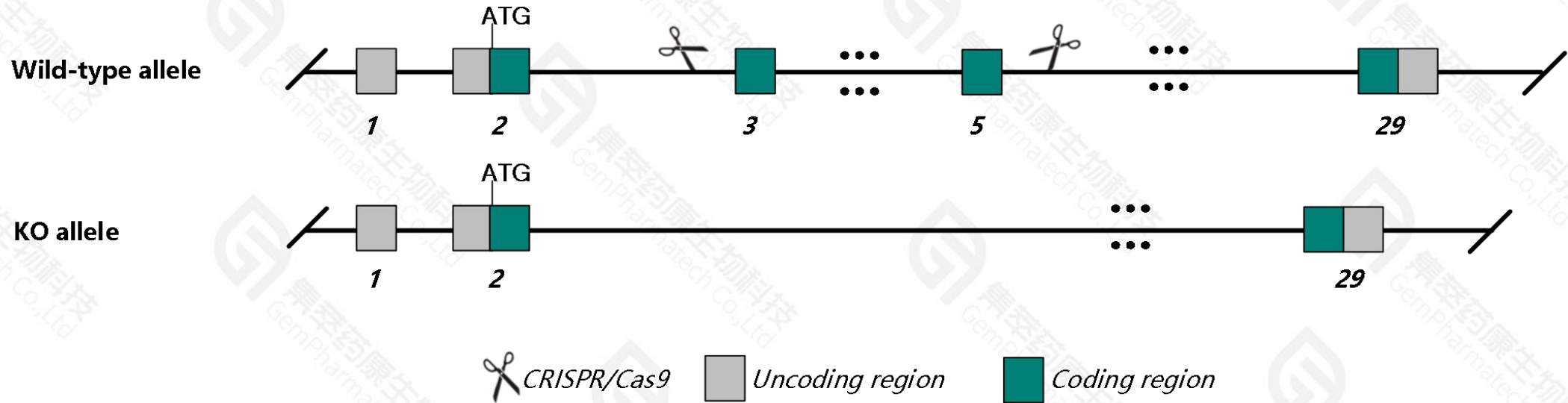
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ubp2* gene. The schematic diagram is as follows:



- The *Ubap2* gene has 8 transcripts. According to the structure of *Ubap2* gene, exon3-exon5 of *Ubap2*-201(ENSMUST00000030143.13) transcript is recommended as the knockout region. The region contains 343bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ubap2* gene. The brief process is as follows: CRISPR/Cas9 system 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 *Ubap2* gene is located on the Chr4. 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Ubp2 ubiquitin-associated protein 2 [Mus musculus (house mouse)]

Gene ID: 68926, updated on 17-Dec-2020

Summary



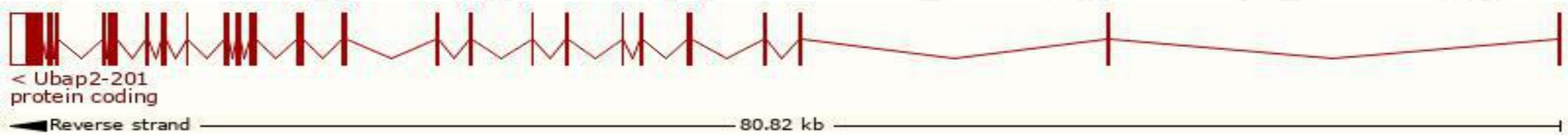
Official Symbol	Ubp2 provided by MGI
Official Full Name	ubiquitin-associated protein 2 provided by MGI
Primary source	MGI:MGI:1916176
See related	Ensembl:ENSMUSG00000028433
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1190005K07Rik, AA408600, AU045235, UBAP-2, mKIAA1491
Expression	Ubiquitous expression in testis adult (RPKM 65.5), thymus adult (RPKM 28.5) and 28 other tissues See more
Orthologs	human all

Transcript information （Ensembl）

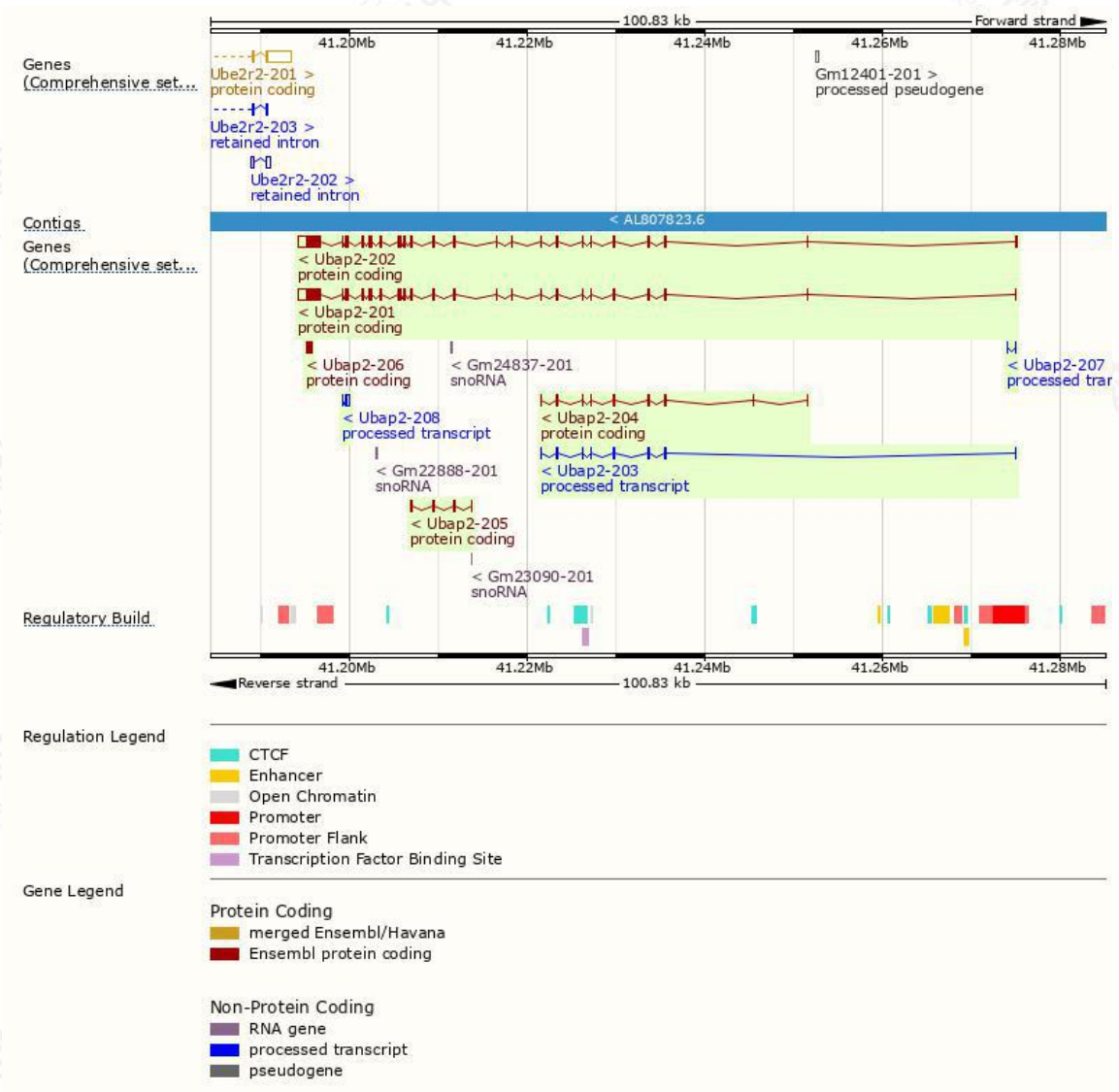
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ubp2-201	ENSMUST00000030143.13	4368	1132aa	Protein coding	CCDS18058		TSL:1 , GENCODE basic , APPRIS P2 ,
Ubp2-202	ENSMUST00000108068.8	4380	1131aa	Protein coding	-		TSL:1 , GENCODE basic , APPRIS ALT2 ,
Ubp2-204	ENSMUST00000134782.2	735	245aa	Protein coding	-		CDS 5' and 3' incomplete , TSL:3 ,
Ubp2-205	ENSMUST00000135323.2	696	227aa	Protein coding	-		CDS 3' incomplete , TSL:3 ,
Ubp2-206	ENSMUST00000136057.2	418	140aa	Protein coding	-		CDS 5' and 3' incomplete , TSL:1 ,
Ubp2-203	ENSMUST00000132499.2	687	No protein	Processed transcript	-		TSL:3 ,
Ubp2-208	ENSMUST00000143552.2	502	No protein	Processed transcript	-		TSL:5 ,
Ubp2-207	ENSMUST00000140662.2	132	No protein	Processed transcript	-		TSL:5 ,

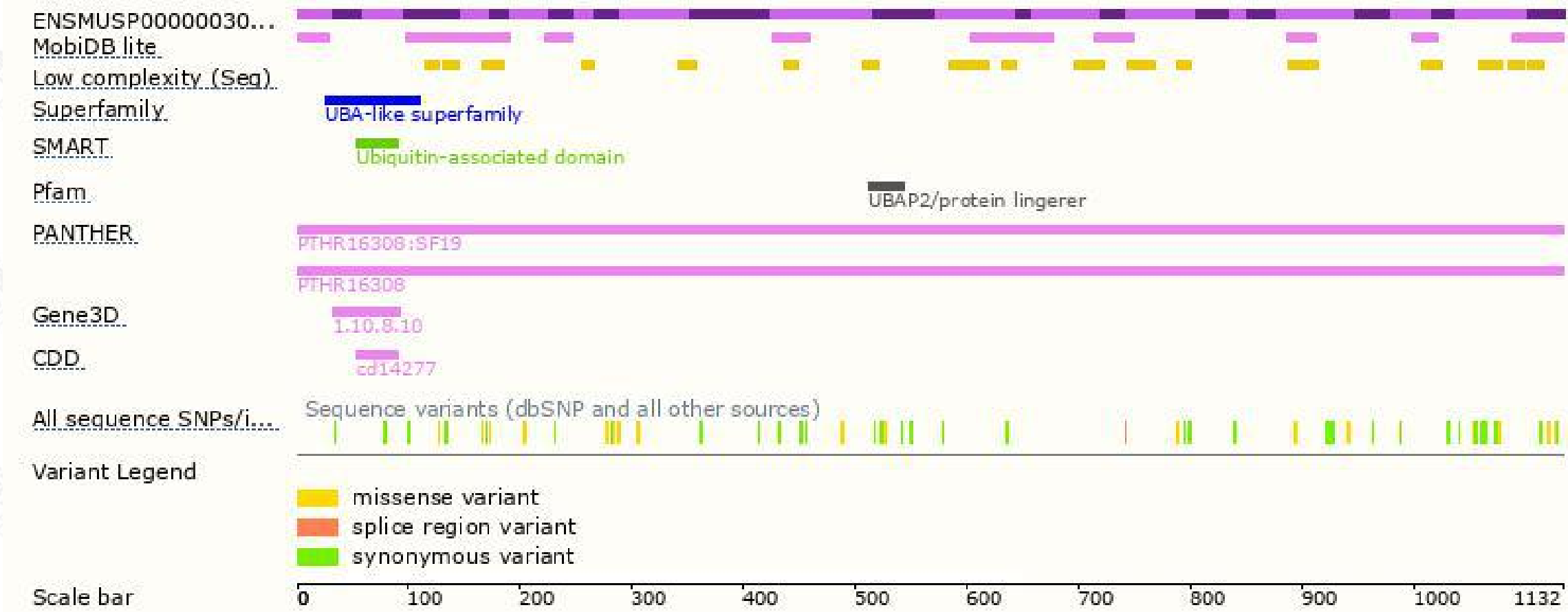
The strategy is based on the design of *Ubp2-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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