

Ubap1 Cas9-KO Strategy

Designer:

Daohua Xu

Project Overview

Project Name

Ubap1

Project type

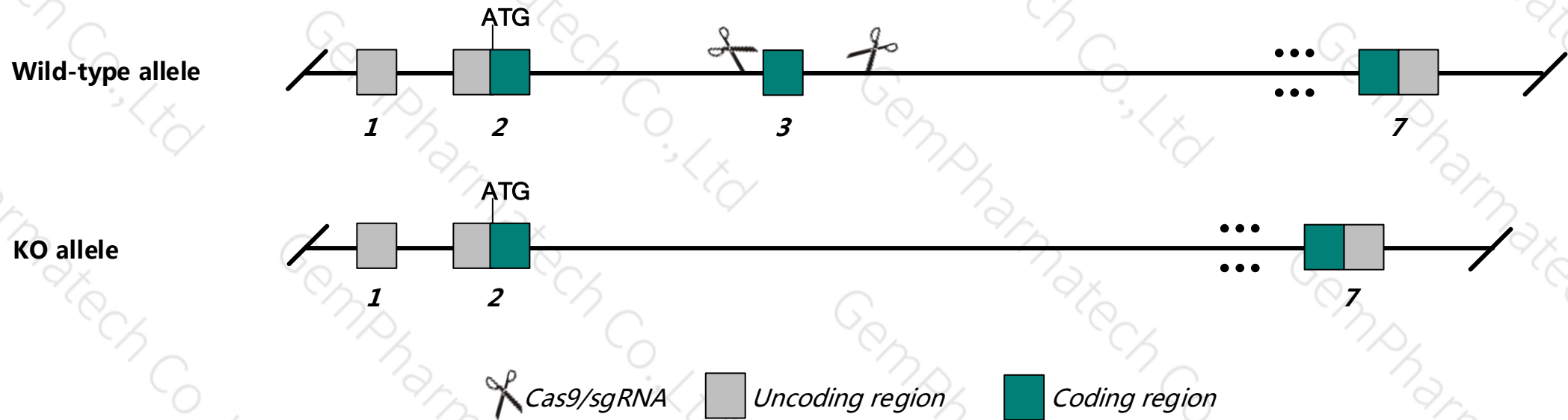
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ubp1* gene. The schematic diagram is as follows:



Technical routes

- The *Ubap1* gene has 5 transcripts. According to the structure of *Ubap1* gene, exon3 of *Ubap1*-201 (ENSMUST00000072866.11) transcript is recommended as the knockout region. The region contains 125bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ubap1* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA 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 *Ubp1* 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, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Ubp1 ubiquitin-associated protein 1 [*Mus musculus* (house mouse)]

Gene ID: 67123, updated on 5-Aug-2018

Summary

Official Symbol Ubp1 provided by [MGI](#)

Official Full Name ubiquitin-associated protein 1 provided by [MGI](#)

Primary source [MGI:MGI:2149543](#)

See related [Ensembl:ENSMUSG00000028437](#) [Vega:OTTMUSG00000006663](#)

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 Ubp; NAG20; UBAP-1; 2700092A01Rik

Expression Ubiquitous expression in testis adult (RPKM 11.0), kidney adult (RPKM 8.7) and 28 other tissues [See more](#)

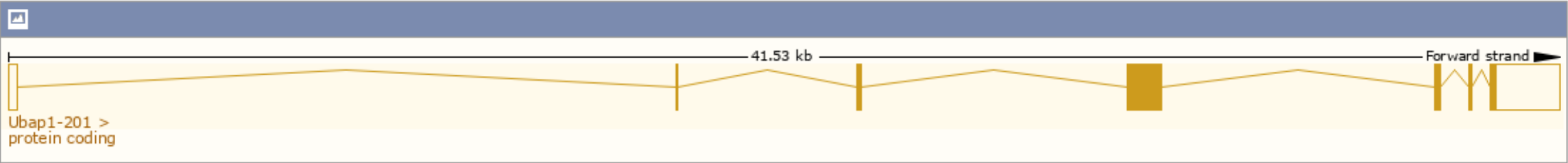
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

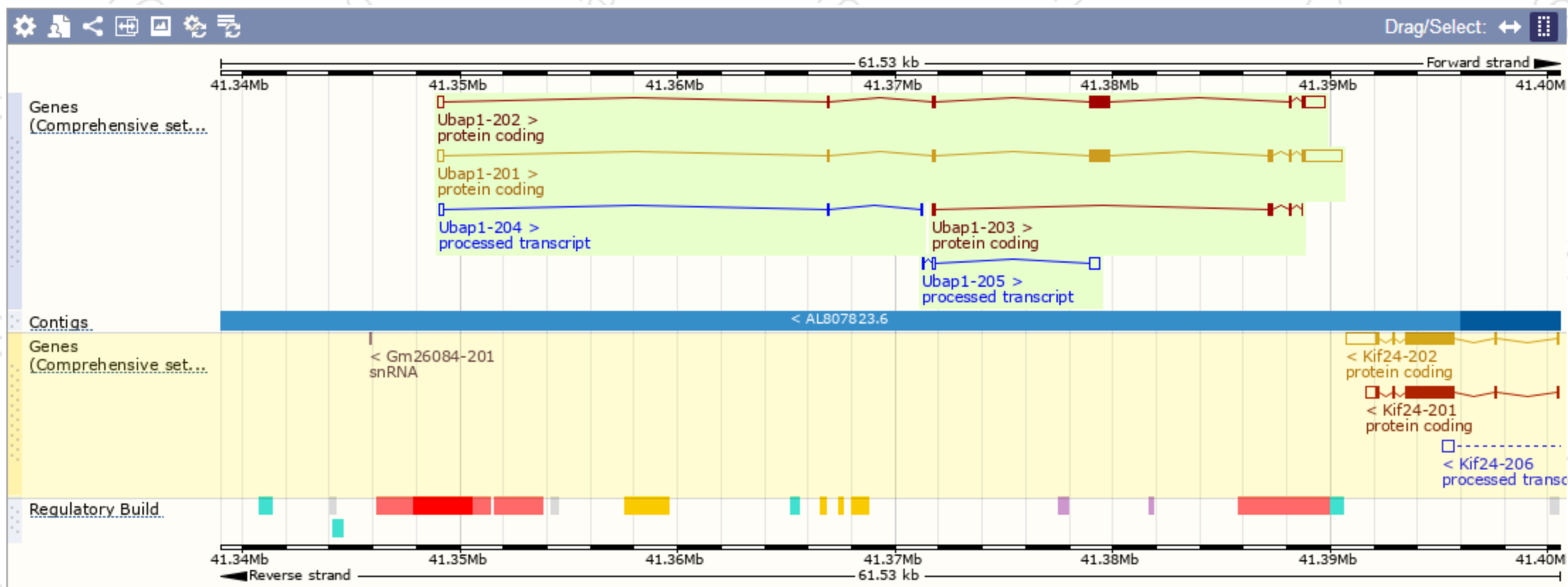
The gene has 5 transcripts, and all transcripts are shown below:

Show/hide columns (1 hidden)								Filter	
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	RefSeq	Flags	
Ubap1-201	ENSMUST00000072866.11	3456	502aa	Protein coding	CCDS51140	Q8BH48	NM_023305 NP_001342437 NP_075794	TSL:1	GENCODE basic APPRIS P1
Ubap1-202	ENSMUST00000108060.9	2514	441aa	Protein coding	CCDS71361	Q8BH48	NM_001290454 NP_001277383	TSL:1	GENCODE basic
Ubap1-203	ENSMUST00000132235.1	422	141aa	Protein coding	-	F6WHE1	-	CDS 5' and 3' incomplete	TSL:5
Ubap1-205	ENSMUST00000154529.1	671	No protein	Processed transcript	-	-	-	TSL:3	
Ubap1-204	ENSMUST00000136705.1	314	No protein	Processed transcript	-	-	-	TSL:3	

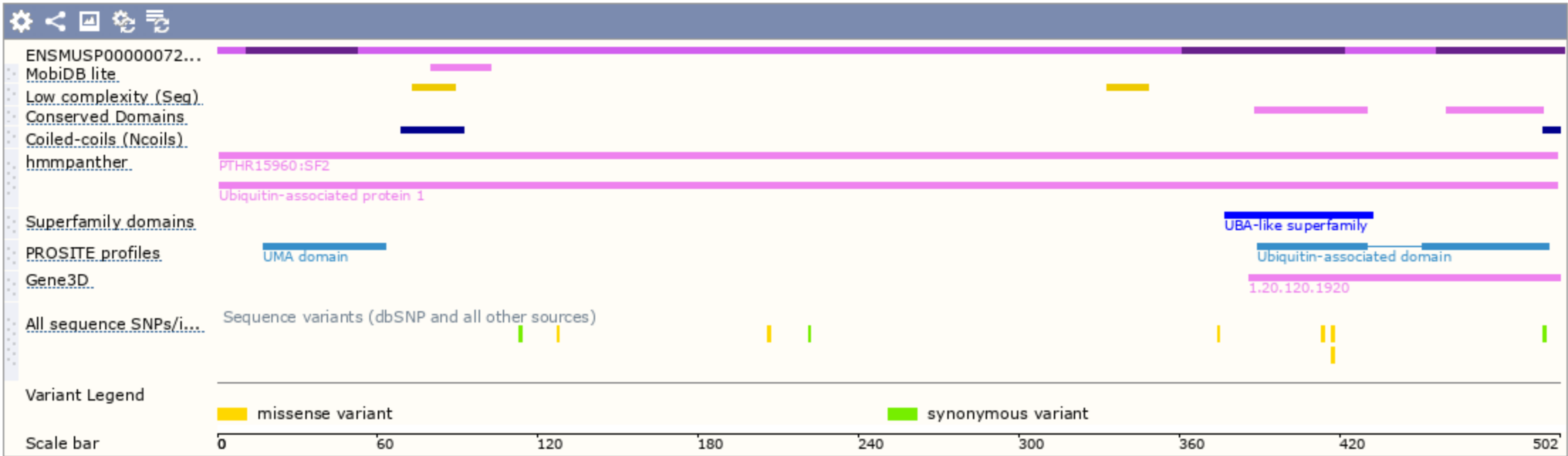
The strategy is based on the design of *Ubap1-201* transcript, The transcription is shown below



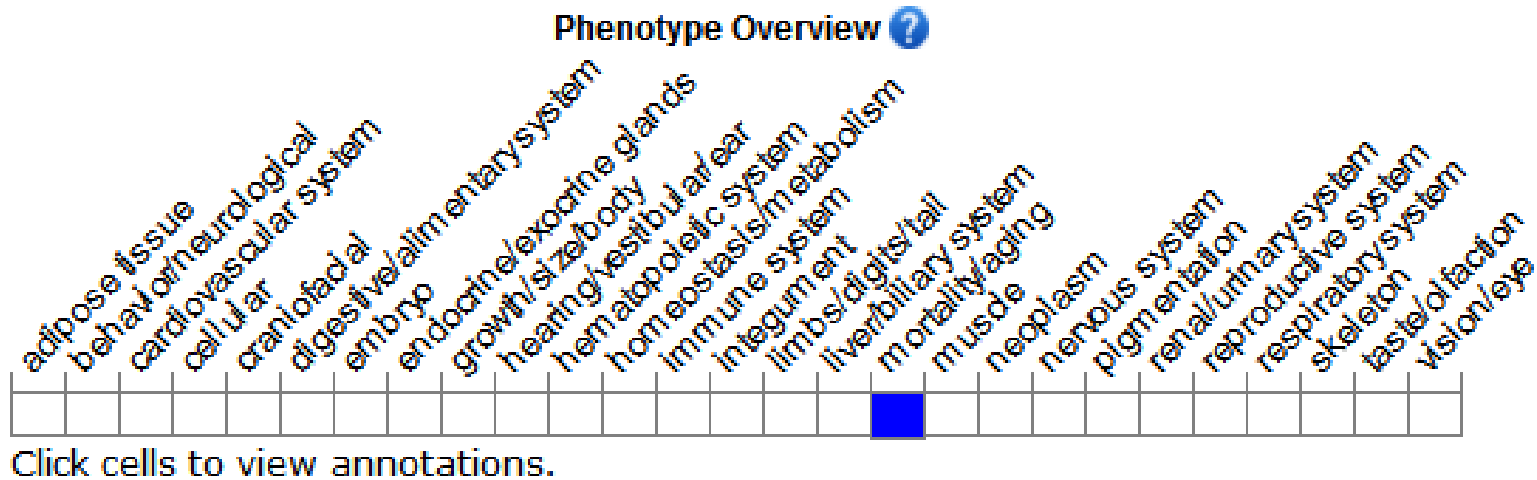
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue.Data quoted from MGI database(<http://www.informatics.jax.org/>) .

If you have any questions, you are welcome to inquire.
Tel: 025-5864 1534

