

***Kbtbd12* Cas9-KO Strategy**

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Project Overview



Project Name

Kbtbd12

Project type

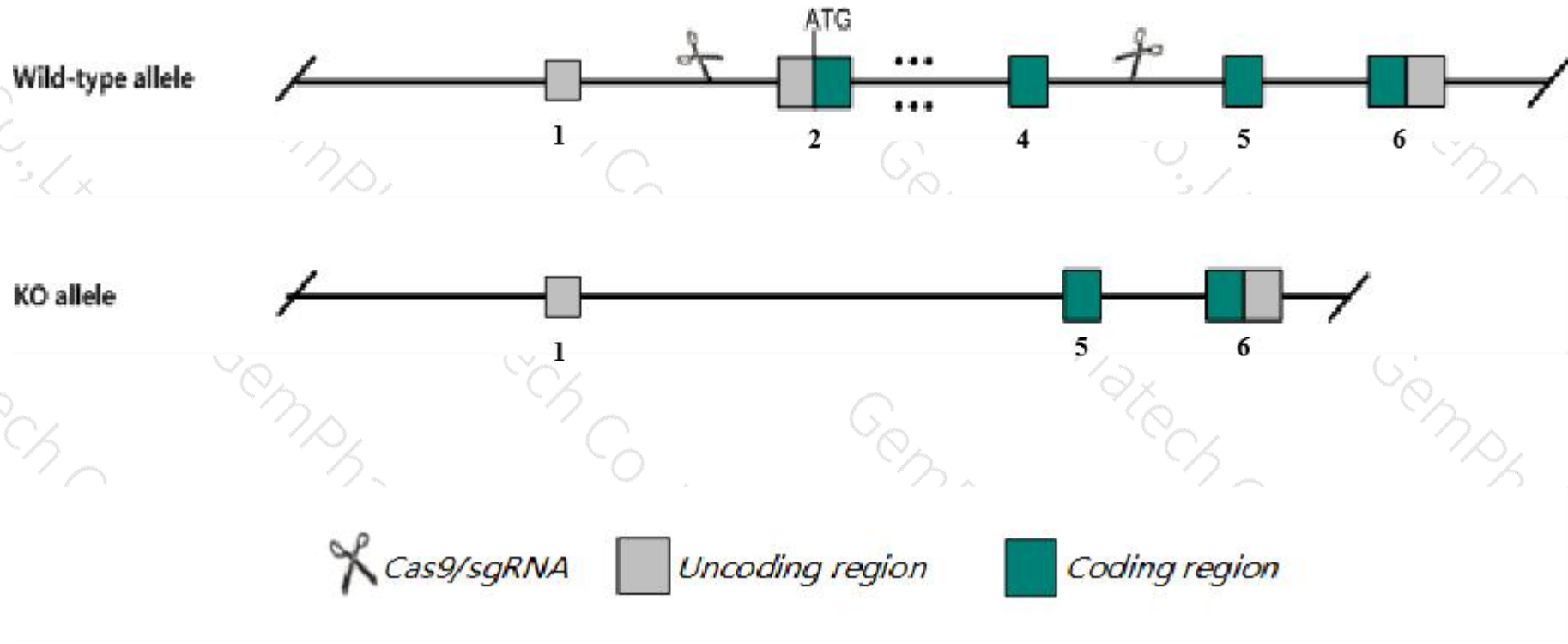
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Kbtbd12* gene. The schematic diagram is as follows:



- The *Kbtbd12* gene has 7 transcripts. According to the structure of *Kbtbd12* gene, exon2-exon4 of *Kbtbd12*-202(ENSMUST00000120933.4) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Kbtbd12* 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 *Kbtbd12* gene is located on the Chr6. 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.

Kbtbd12 kelch repeat and BTB (POZ) domain containing 12 [*Mus musculus* (house mouse)]

Gene ID: 74589, updated on 25-Sep-2020

Summary

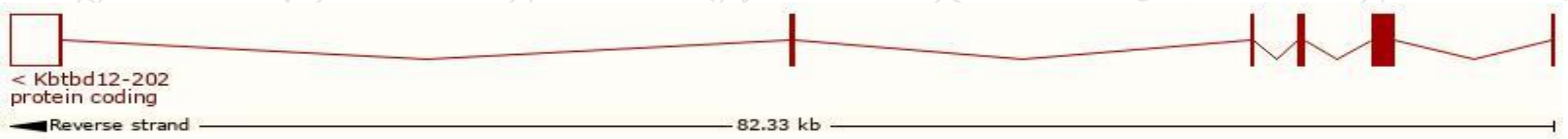
Official Symbol	Kbtbd12 provided by MGI
Official Full Name	kelch repeat and BTB (POZ) domain containing 12 provided by MGI
Primary source	MGI:MGI:1918481
See related	Ensembl:ENSMUSG00000033182
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Klhdc; Klhdc6; 4833415F11Rik; 4933428M03Rik
Expression	Biased expression in heart adult (RPKM 4.7), mammary gland adult (RPKM 1.7) and 4 other tissues See more
Orthologs	human all

Transcript information Ensembl

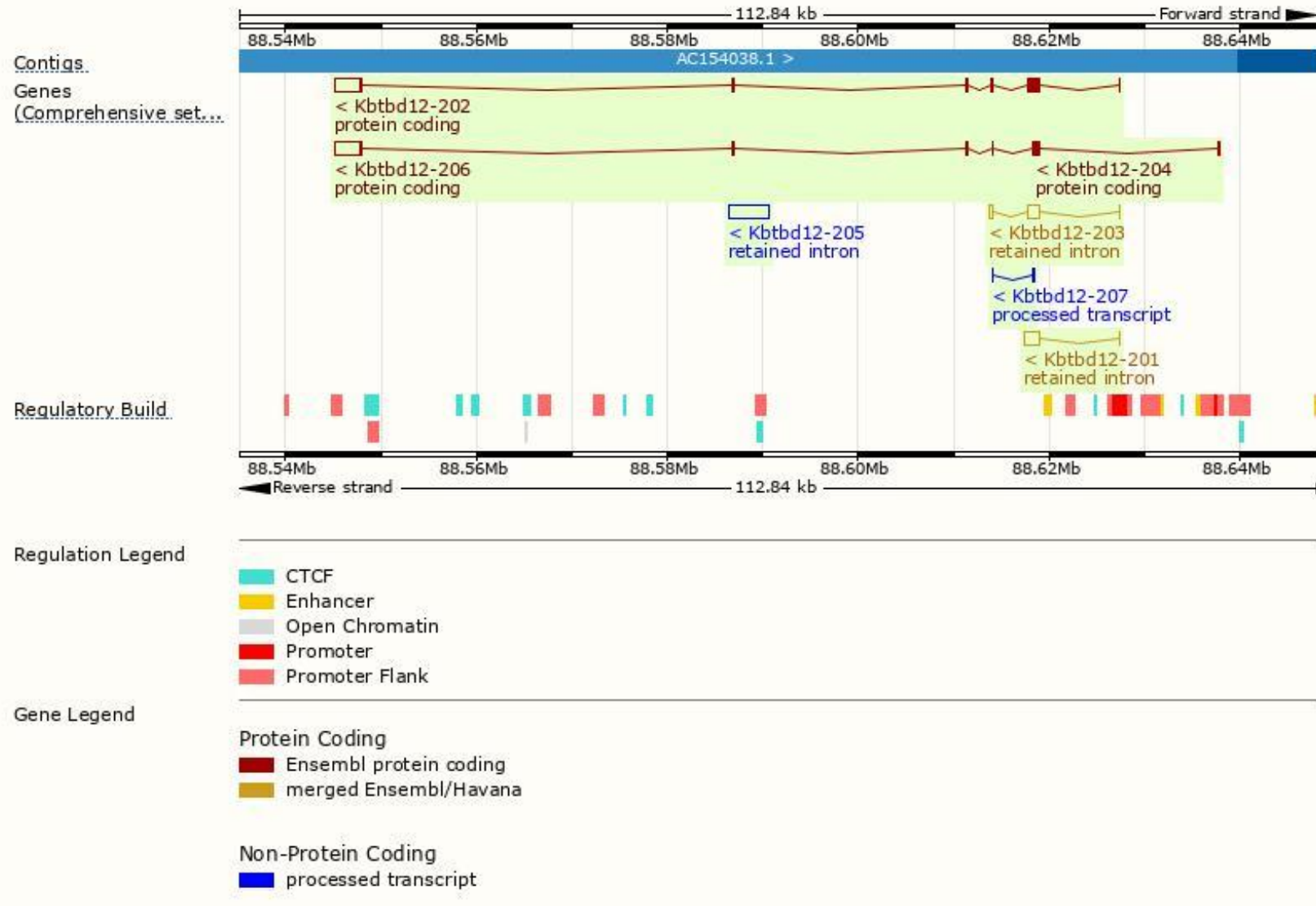
The gene has 7 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Kbtbd12-202	ENSMUST00000120933.4	4644	625aa	Protein coding	CCDS51842	Q9D618	TSL:5 GENCODE basic APPRIS P1
Kbtbd12-206	ENSMUST00000184878.6	3351	202aa	Protein coding	-	V9GXV2	TSL:5 GENCODE basic
Kbtbd12-204	ENSMUST00000184664.1	647	76aa	Protein coding	-	V9GXB1	CDS 3' incomplete TSL:3
Kbtbd12-207	ENSMUST00000203223.1	291	No protein	Processed transcript	-	-	TSL:3
Kbtbd12-205	ENSMUST00000184743.2	4134	No protein	Retained intron	-	-	TSL:NA
Kbtbd12-203	ENSMUST00000184591.1	1642	No protein	Retained intron	-	-	TSL:1
Kbtbd12-201	ENSMUST00000038804.3	1572	No protein	Retained intron	-	-	TSL:1

The strategy is based on the design of *Kbtbd12-202* 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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