

# *Abtb1* Cas9-KO Strategy

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# Project Overview

**Project Name**

*Abtb1*

**Project type**

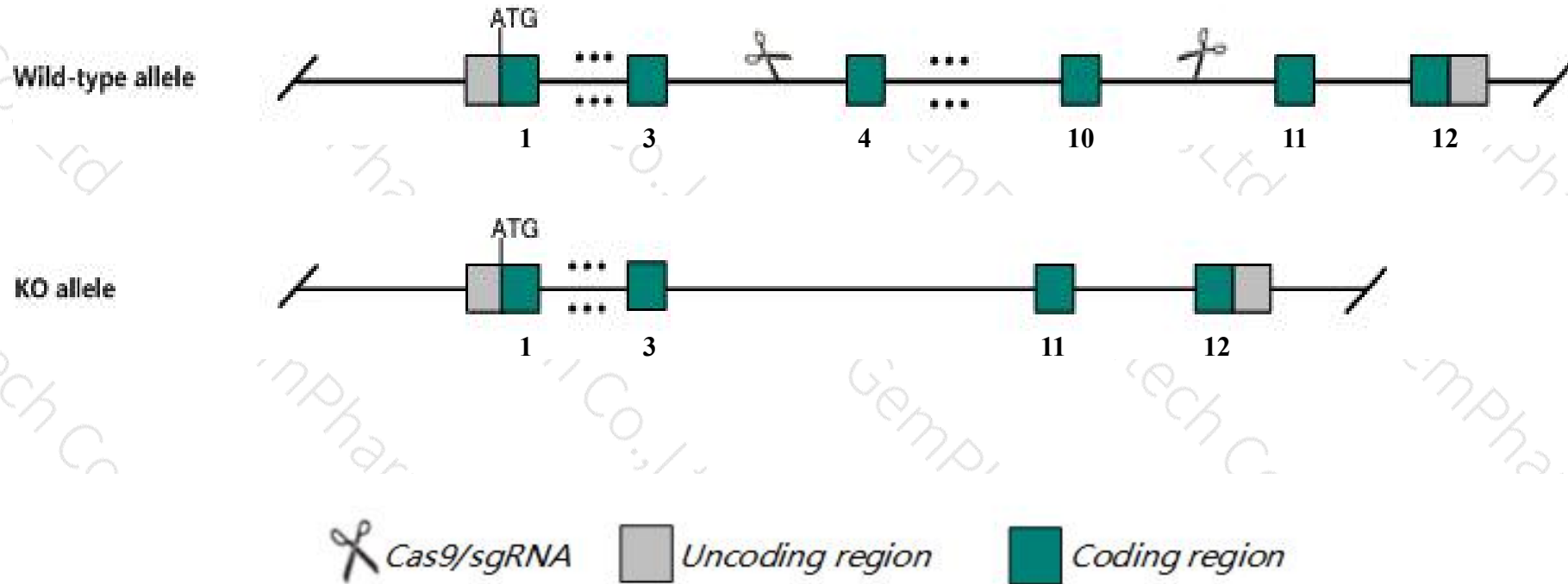
**Cas9-KO**

**Strain background**

**C57BL/6J**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Abtb1* gene. The schematic diagram is as follows:



- The *Abtb1* gene has 12 transcripts. According to the structure of *Abtb1* gene, exon4-exon10 of *Abtb1-201* (ENSMUST00000032169.7) transcript is recommended as the knockout region. The region contains 854bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Abtb1* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6J 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/6J mice.

- The *Abtb1* 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.
- The distance between the knockout region and *Gm15612* gene is about 2.1kb, which may influence the 5-terminal regulation of *Gm15612* gene.
- This Strategy is designed based on genetic information in existing databases. Due to the complexity of gene transcription and translation processes, all risks cannot be predicted under existing information.



# Gene information (NCBI)

## Abtb1 ankyrin repeat and BTB (POZ) domain containing 1 [Mus musculus (house mouse)]

Gene ID: 80283, updated on 31-Jan-2019

### Summary



<b>Official Symbol</b>	Abtb1 provided by <a href="#">MGI</a>
<b>Official Full Name</b>	ankyrin repeat and BTB (POZ) domain containing 1 provided by <a href="#">MGI</a>
<b>Primary source</b>	<a href="#">MGI:MGI:1933148</a>
<b>See related</b>	<a href="#">Ensembl:ENSMUSG00000030083</a>
<b>Gene type</b>	protein coding
<b>RefSeq status</b>	VALIDATED
<b>Organism</b>	<a href="#">Mus musculus</a>
<b>Lineage</b>	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
<b>Also known as</b>	AI847549, BC003234, BPOZ, EF1ABP
<b>Expression</b>	Ubiquitous expression in thymus adult (RPKM 35.2), ovary adult (RPKM 26.5) and 28 other tissues <a href="#">See more</a>
<b>Orthologs</b>	<a href="#">human</a> <a href="#">all</a>

# Transcript information (Ensembl)

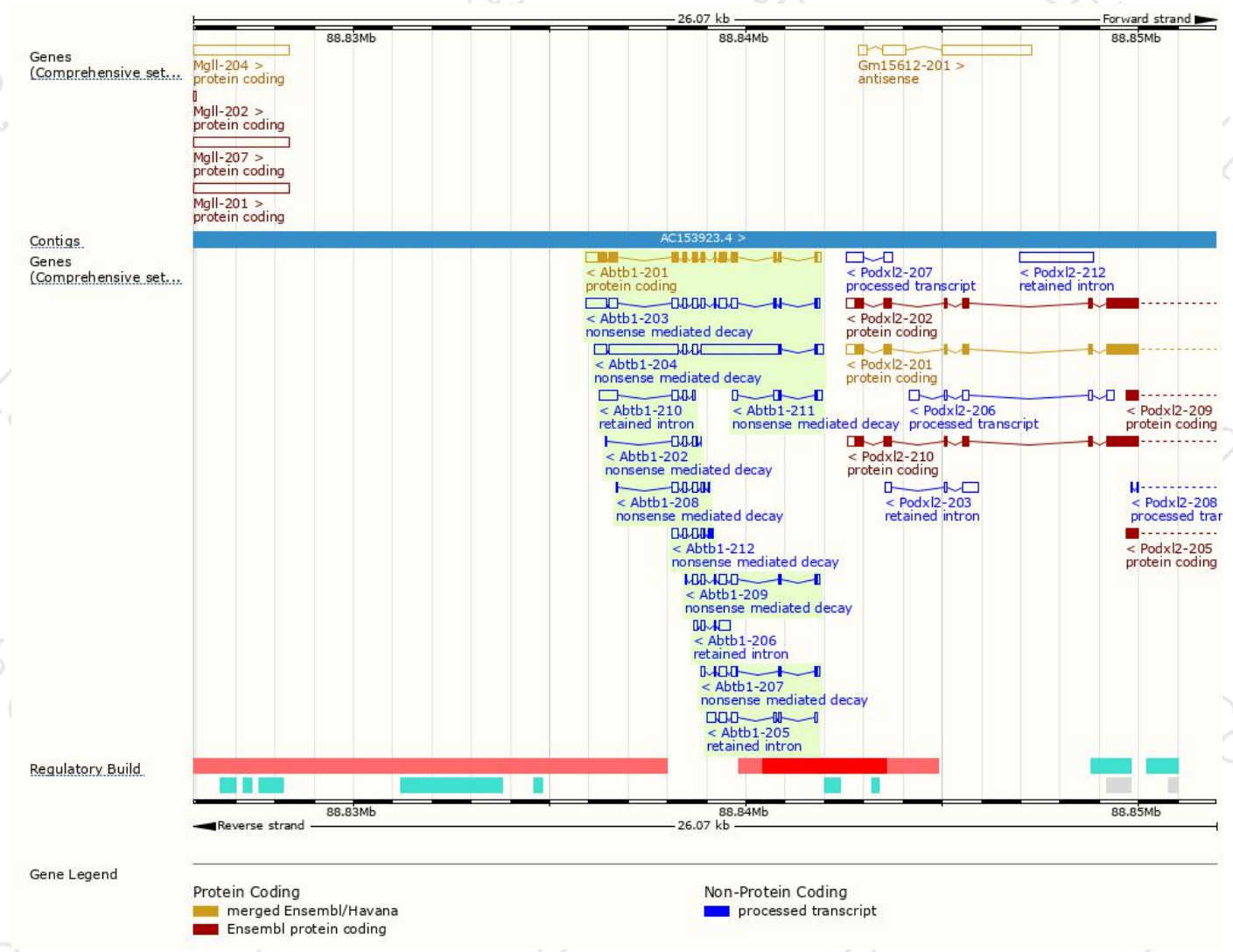
The gene has 12 transcript,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Abtb1-201	<a href="#">ENSMUST00000032169.7</a>	1845	<a href="#">478aa</a>	Protein coding	<a href="#">CCDS20339</a>	<a href="#">A0A0R4J0A1</a>	TSL:1 GENCODE basic APPRIS P1
Abtb1-204	<a href="#">ENSMUST00000203272.2</a>	4556	<a href="#">40aa</a>	Nonsense mediated decay	-	<a href="#">A0A0N4SVK7</a>	TSL:1
Abtb1-203	<a href="#">ENSMUST00000203137.2</a>	1774	<a href="#">36aa</a>	Nonsense mediated decay	-	<a href="#">A0A0N4SUP1</a>	TSL:1
Abtb1-209	<a href="#">ENSMUST00000204458.2</a>	783	<a href="#">40aa</a>	Nonsense mediated decay	-	<a href="#">A0A0N4SVK7</a>	TSL:5
Abtb1-207	<a href="#">ENSMUST00000203864.2</a>	645	<a href="#">43aa</a>	Nonsense mediated decay	-	<a href="#">A0A0N4SVV0</a>	TSL:5
Abtb1-212	<a href="#">ENSMUST00000205082.2</a>	596	<a href="#">47aa</a>	Nonsense mediated decay	-	<a href="#">A0A0N4SV19</a>	CDS 5' incomplete TSL:3
Abtb1-208	<a href="#">ENSMUST00000204327.2</a>	579	<a href="#">22aa</a>	Nonsense mediated decay	-	<a href="#">A0A0N4SVH8</a>	CDS 5' incomplete TSL:3
Abtb1-211	<a href="#">ENSMUST00000204932.1</a>	465	<a href="#">40aa</a>	Nonsense mediated decay	-	<a href="#">A0A0N4SVK7</a>	TSL:2
Abtb1-202	<a href="#">ENSMUST00000203120.2</a>	438	<a href="#">16aa</a>	Nonsense mediated decay	-	<a href="#">A0A0N4SW21</a>	CDS 5' incomplete TSL:3
Abtb1-210	<a href="#">ENSMUST00000204560.2</a>	793	No protein	Retained intron	-	-	TSL:2
Abtb1-205	<a href="#">ENSMUST00000203460.1</a>	715	No protein	Retained intron	-	-	TSL:3
Abtb1-206	<a href="#">ENSMUST00000203514.2</a>	522	No protein	Retained intron	-	-	TSL:3

The strategy is based on the design of *Abtb1-201* 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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