

# Zbtb34 Cas9-KO Strategy

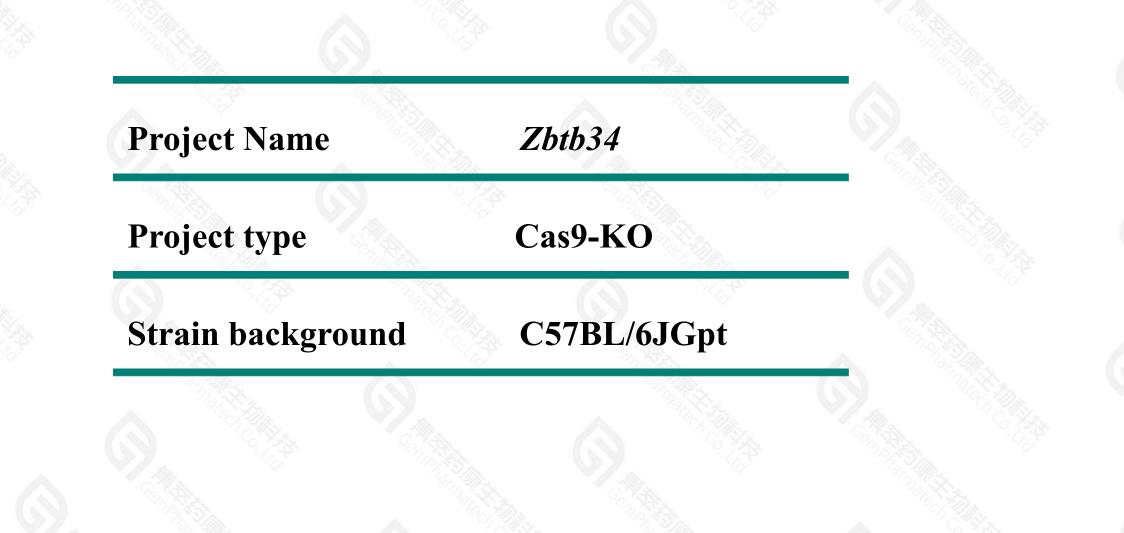
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**Reviewer: Xueting Zhang** 

**Design Date: 2021-2-9** 

# **Project Overview**

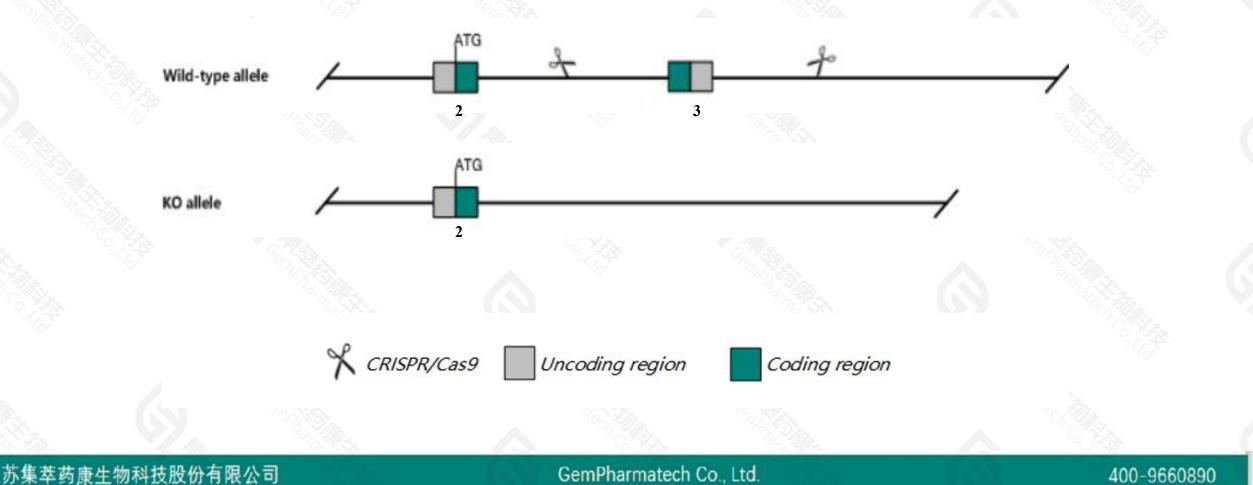




## **Knockout strategy**



This model will use CRISPR/Cas9 technology to edit the Zbtb34 gene. The schematic diagram is as follows:





➤ The Zbtb34 gene has 3 transcripts. According to the structure of Zbtb34 gene, exon3 of Zbtb34-202(ENSMUST00000113158.7) transcript is recommended as the knockout region. The region contains 1525bp coding sequence. Knock out the region will result in disruption of protein function.

➤ In this project we use CRISPR/Cas9 technology to modify *Zbtb34* 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 *Zbtb34* gene is located on the Chr2. 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.

# **Gene information (NCBI)**

### Zbtb34 zinc finger and BTB domain containing 34 [Mus musculus (house mouse)]

Gene ID: 241311, updated on 13-Mar-2020

#### Summary

Official Symbol	Zbtb34 provided by MGI
<b>Official Full Name</b>	zinc finger and BTB domain containing 34 provided by MGI
<b>Primary source</b>	MGI:MGI:2685195
See related	Ensembl:ENSMUSG0000068966
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	Gm349, mKIAA1993
Expression	Ubiquitous expression in limb E14.5 (RPKM 5.1), CNS E18 (RPKM 4.8) and 28 other tissuesSee more
Orthologs	human all

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# **Transcript information (Ensembl)**



### The gene has 3 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zbtb34-202	ENSMUST00000113158.7	6602	<u>518aa</u>	Protein coding	CCDS38106	A2ATY4	TSL:3 GENCODE basic APPRIS P1
Zbtb34-201	ENSMUST0000091037.2	6510	<u>518aa</u>	Protein coding	CCDS38106	A2ATY4	TSL:1 GENCODE basic APPRIS P1
Zbtb34-203	ENSMUST00000134589.1	664	No protein	Processed transcript	100	123	TSL:2

The strategy is based on the design of *Zbtb34-202* transcript, the transcription is shown below:

< Zbtb34-202 protein coding

Reverse strand

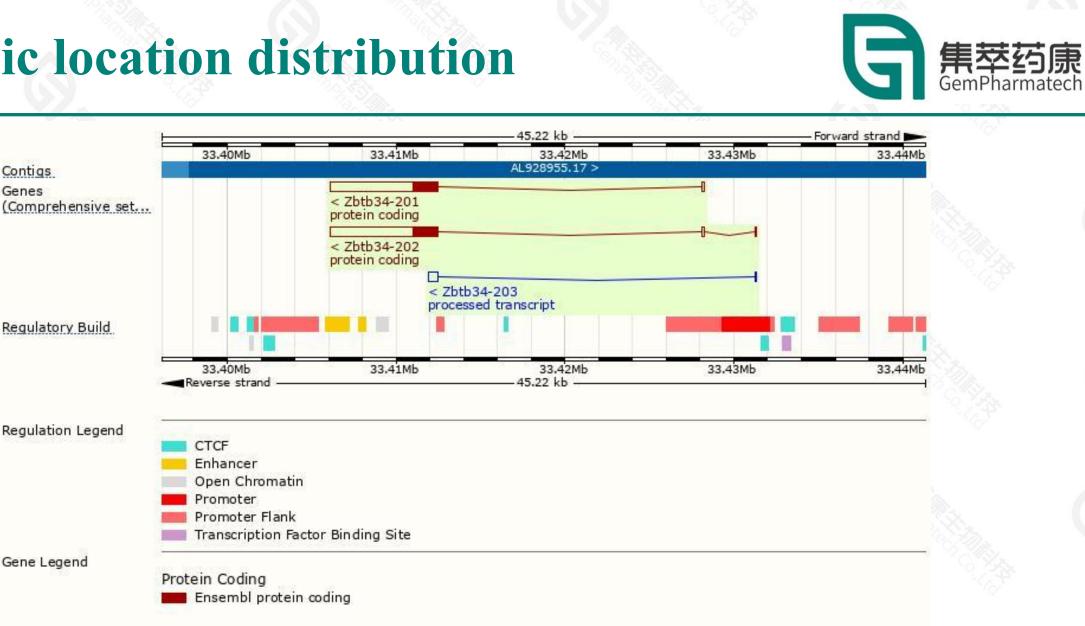
- 25.22 kb -

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### **Genomic location distribution**



Non-Protein Coding

processed transcript

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Contigs Genes

**Regulatory Build** 

Gene Legend

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# **Protein domain**



ENSMUSP00000088 MobiDB lite Low complexity (Seg)			E.		6			(
Superfamily	SKP1/BTB/POZ d	omain superfami	ły			Z	inc finger C2H2 sup	erfamily
SMART	BTB/POZ d	omain				Z	inc finger C2H2-typ	e
fam	BTB/POZ don	nain				Z	inc finger C2H2-ty	pe
PROSITE profiles	BTB/POZ c		Zinc finger C2H2-type					
ROSITE patterns						Z	inc finger C2H2-ty	pe
PANTHER	PTHR.24399:SF42							
	PTHR24399							
Gene3D	3,30,710,10		-2			3	.30.160.60	<u> </u>
CDD.	cd18220							
All sequence SNPs/i	Sequence variants (o	IbSNP and all o	ther sources)				1	
Variant Legend	missense varia synonymous va							
Scale bar	ົດ ່60	120	180	240	300	360	420	518

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If you have any questions, you are welcome to inquire. Tel: 400-9660890



