

Pbx4 Cas9-KO Strategy

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Project Overview

Project Name

Pbx4

Project type

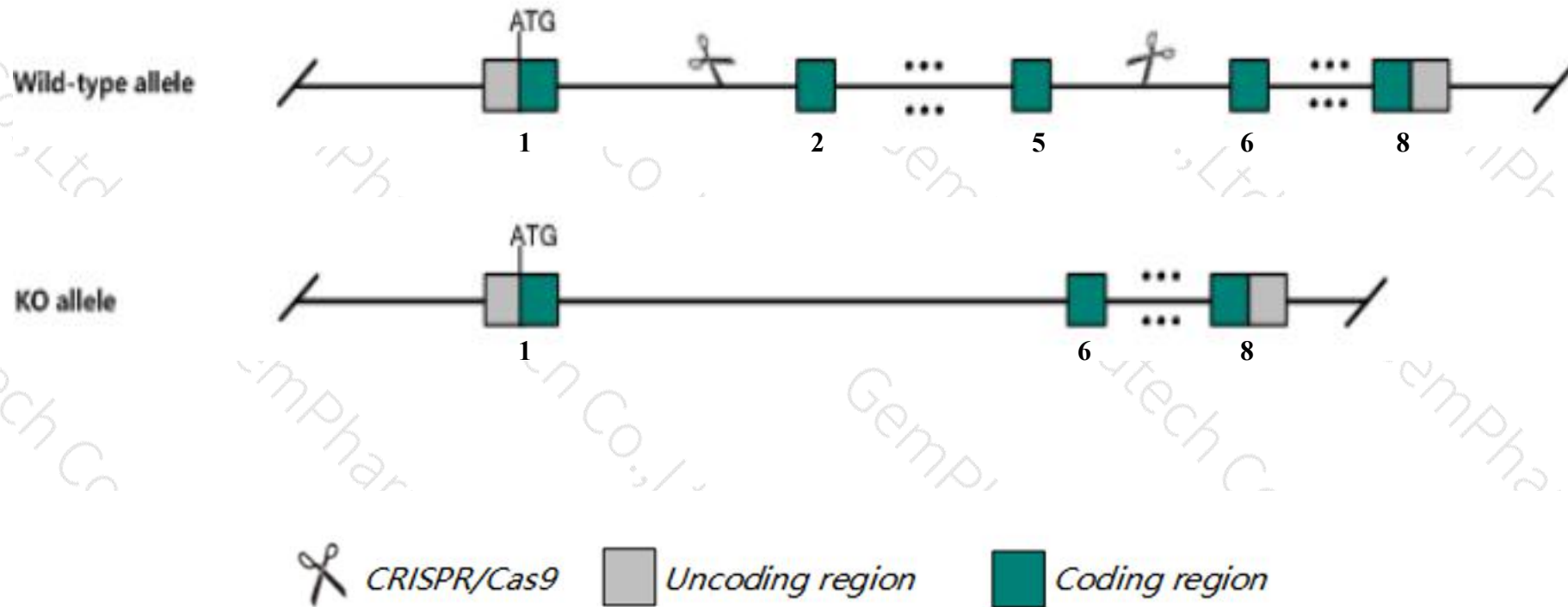
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pbx4* gene. The schematic diagram is as follows:



- The *Pbx4* gene has 9 transcripts. According to the structure of *Pbx4* gene, exon2-exon5 of *Pbx4-201* (ENSMUST00000081503.12) transcript is recommended as the knockout region. The region contains 640bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pbx4* gene. The brief process is as follows: CRISPR/Cas9 system v

- The *Pbx4* gene is located on the Chr8. 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)

Pbx4 pre B cell leukemia homeobox 4 [Mus musculus (house mouse)]

Gene ID: 80720, updated on 13-Mar-2020

Summary



Official Symbol	Pbx4 provided by MGI
Official Full Name	pre B cell leukemia homeobox 4 provided by MGI
Primary source	MGI:MGI:1931321
See related	Ensembl:ENSMUSG00000031860
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	2410015M21Rik, AI429113, AW045266
Expression	Biased expression in testis adult (RPKM 58.8), whole brain E14.5 (RPKM 4.2) and 6 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

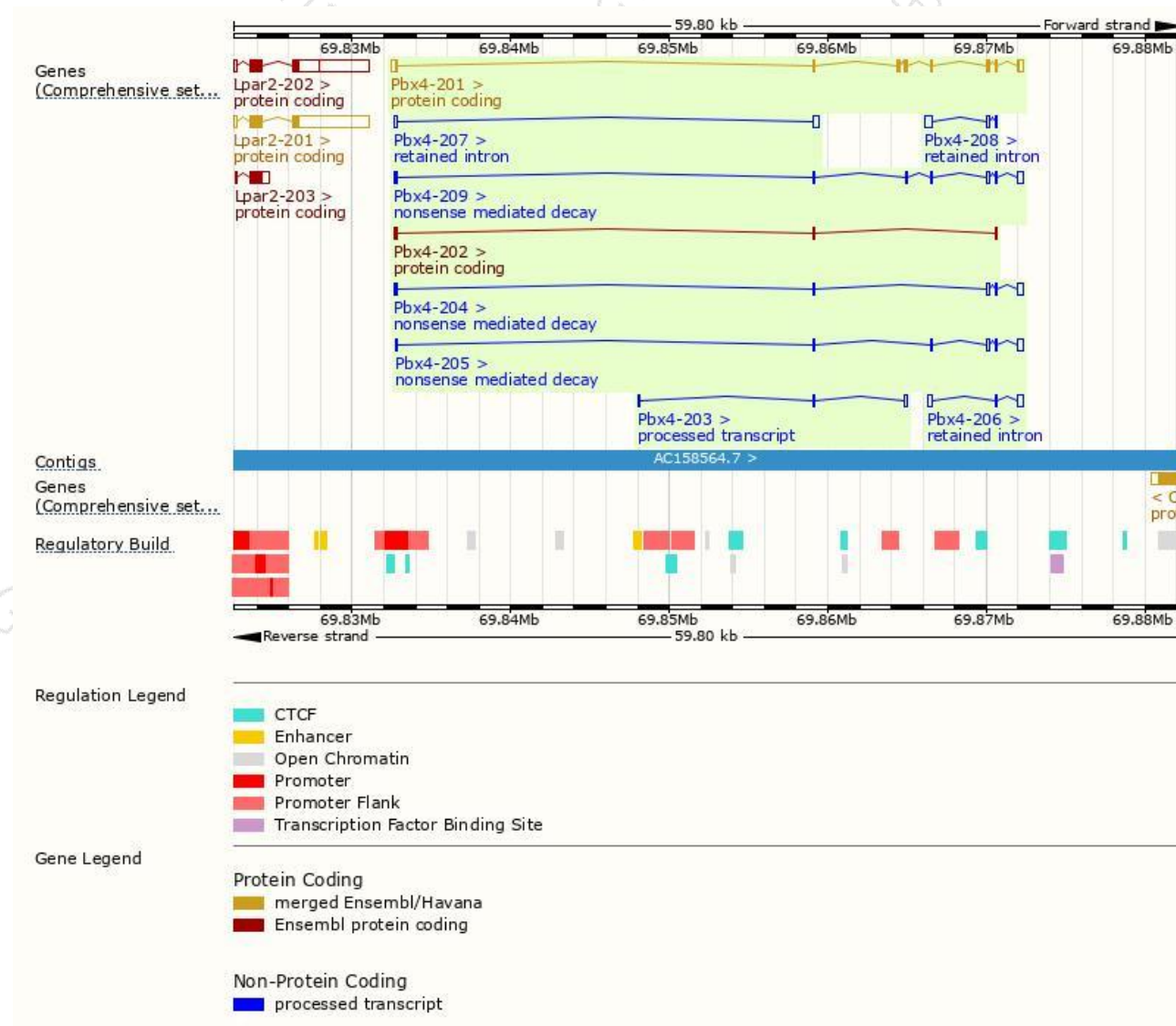
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pbx4-201	ENSMUST00000081503.12	1560	378aa	Protein coding	CCDS22352	Q99NE9	TSL:5 GENCODE basic APPRIS P1
Pbx4-202	ENSMUST00000131637.8	375	108aa	Protein coding	-	D3Z318	CDS 3' incomplete TSL:5
Pbx4-209	ENSMUST00000156319.7	1101	78aa	Nonsense mediated decay	-	D6RIQ9	TSL:1
Pbx4-205	ENSMUST00000134777.9	931	86aa	Nonsense mediated decay	-	D6RGB0	TSL:1
Pbx4-204	ENSMUST00000132899.7	823	74aa	Nonsense mediated decay	-	Q99NE9	TSL:1
Pbx4-203	ENSMUST00000132259.1	281	No protein	Processed transcript	-	-	TSL:5
Pbx4-206	ENSMUST00000135952.1	724	No protein	Retained intron	-	-	TSL:3
Pbx4-208	ENSMUST00000156251.1	708	No protein	Retained intron	-	-	TSL:3
Pbx4-207	ENSMUST00000151975.1	547	No protein	Retained intron	-	-	TSL:3

The strategy is based on the design of *Pbx4-201* 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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