

***Btbd11* Cas9-CKO Strategy**

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Project Overview

Project Name

Btbd11

Project type

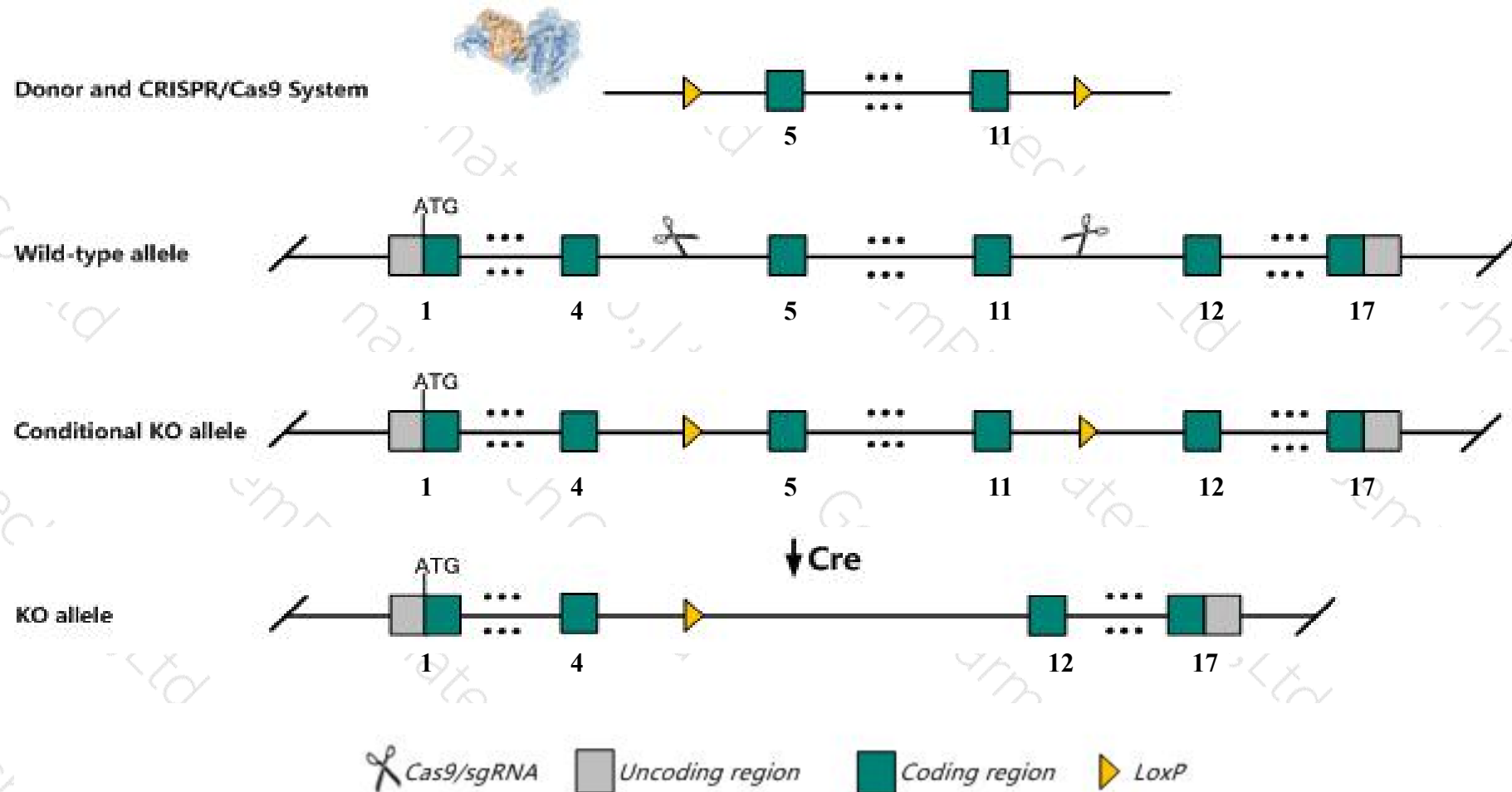
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Btbd11* gene. The schematic diagram is as follows:



- The *Btbd11* gene has 8 transcripts. According to the structure of *Btbd11* gene, exon5-exon11 of *Btbd11*-203(ENSMUST00000105307.7) transcript is recommended as the knockout region. The region contains 988bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Btbd11* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA and Donor 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 flox mice was knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

- The *Btbd11* gene is located on the Chr10. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Btbd11 BTB (POZ) domain containing 11 [Mus musculus (house mouse)]

Gene ID: 74007, updated on 13-Mar-2020

Summary



Official Symbol	Btbd11 provided by MGI
Official Full Name	BTB (POZ) domain containing 11 provided by MGI
Primary source	MGI:MGI:1921257
See related	Ensembl:ENSMUSG00000020042
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	6330404E16Rik
Expression	Broad expression in cerebellum adult (RPKM 5.8), thymus adult (RPKM 5.8) and 22 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

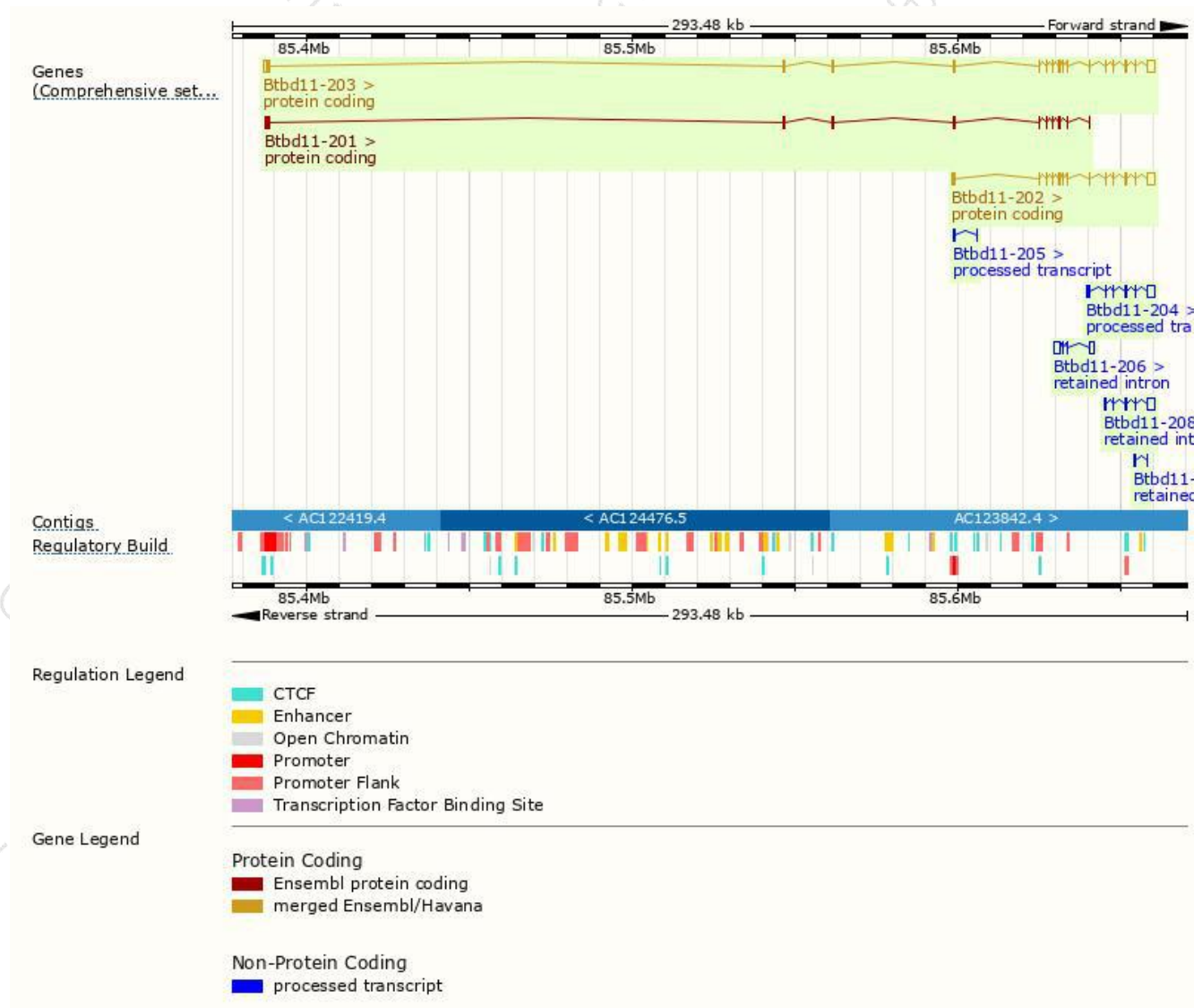
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Btbd11-203	ENSMUST00000105307.7	5788	1109aa	Protein coding	CCDS24091	Q6GQW0	TSL:1 GENCODE basic APPRIS P3
Btbd11-202	ENSMUST00000105306.2	3945	640aa	Protein coding	CCDS36018	E9QJW1	TSL:1 GENCODE basic APPRIS ALT2
Btbd11-201	ENSMUST00000020231.9	2883	793aa	Protein coding	-	H7BWX5	CDS 3' incomplete TSL:5
Btbd11-204	ENSMUST00000128338.7	3246	No protein	Processed transcript	-	-	TSL:1
Btbd11-205	ENSMUST00000135235.1	560	No protein	Processed transcript	-	-	TSL:2
Btbd11-206	ENSMUST00000145323.1	3337	No protein	Retained intron	-	-	TSL:1
Btbd11-208	ENSMUST00000156123.1	2806	No protein	Retained intron	-	-	TSL:1
Btbd11-207	ENSMUST00000145433.1	555	No protein	Retained intron	-	-	TSL:3

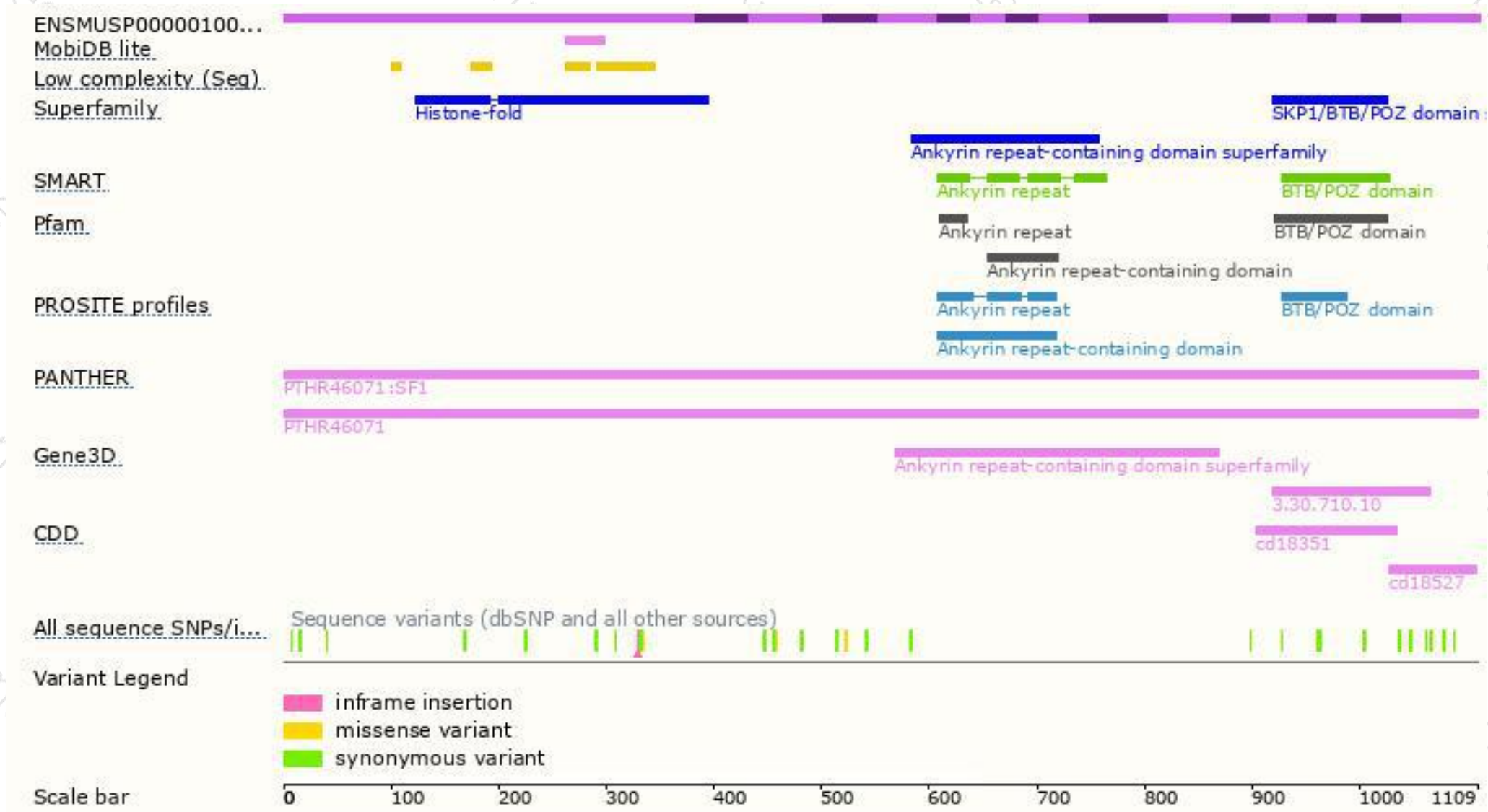
The strategy is based on the design of *Btbd11-203* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



If you have any questions, you are welcome to inquire.

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