

***Brd8* Cas9-KO Strategy**

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Project Overview

Project Name

Brd8

Project type

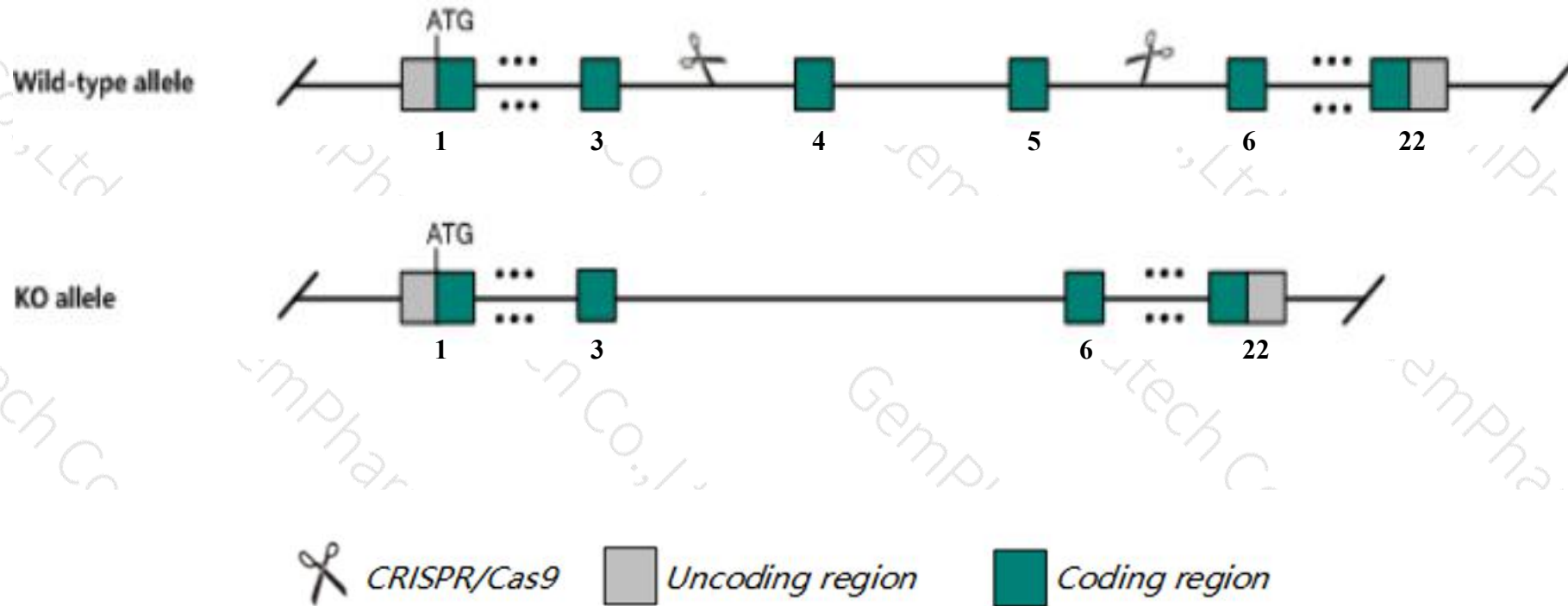
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Brd8* gene. The schematic diagram is as follows:



- The *Brd8* gene has 8 transcripts. According to the structure of *Brd8* gene, exon4-exon5 of *Brd8*-201(ENSMUST00000003876.9) transcript is recommended as the knockout region. The region contains 173bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Brd8* 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 *Brd8* gene is located on the Chr18. 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)

Brd8 bromodomain containing 8 [Mus musculus (house mouse)]

Gene ID: 78656, updated on 13-Mar-2020

Summary



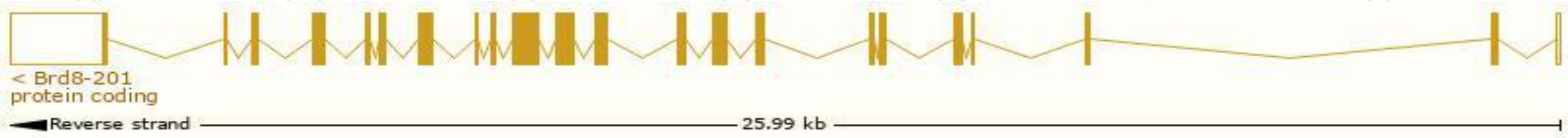
Official Symbol	Brd8 provided by MGI
Official Full Name	bromodomain containing 8 provided by MGI
Primary source	MGI:MGI:1925906
See related	Ensembl:ENSMUSG00000003778
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2610007E11Rik, 4432404P07Rik, SMAP
Expression	Ubiquitous expression in CNS E11.5 (RPKM 21.2), CNS E14 (RPKM 15.8) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

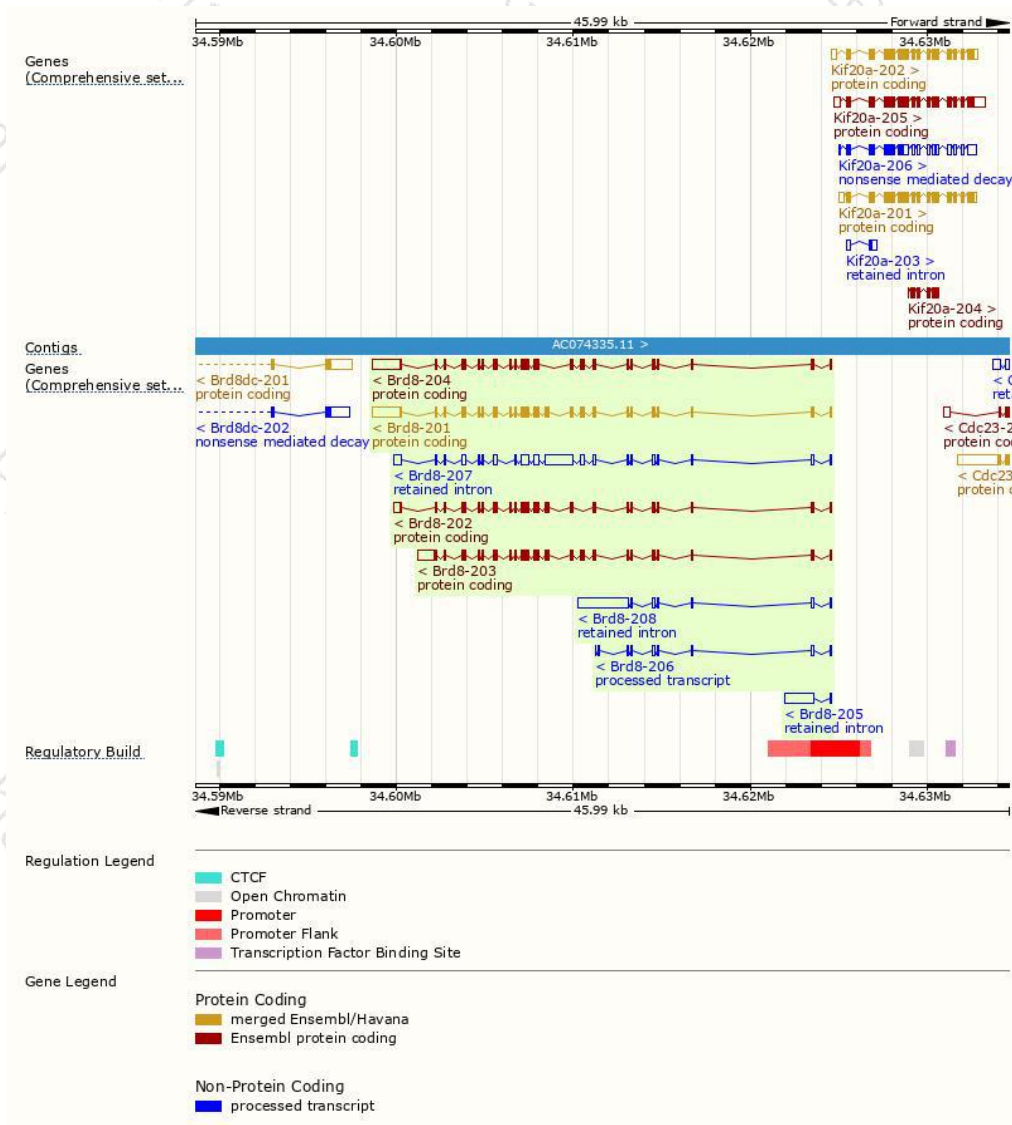
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Brd8-201	ENSMUST00000003876.9	4468	951aa	Protein coding	CCDS50248	Q8R3B7	TSL:1 GENCODE basic APPRIS P3
Brd8-204	ENSMUST00000115766.7	4258	881aa	Protein coding	CCDS70880	D3YZC7	TSL:1 GENCODE basic
Brd8-202	ENSMUST00000097626.9	3005	878aa	Protein coding	CCDS70879	Q8R3B7	TSL:1 GENCODE basic APPRIS ALT1
Brd8-203	ENSMUST00000115765.1	3869	954aa	Protein coding	-	D3YZC8	TSL:1 GENCODE basic
Brd8-206	ENSMUST00000145431.1	599	No protein	Processed transcript	-	-	TSL:5
Brd8-207	ENSMUST00000152612.7	4335	No protein	Retained intron	-	-	TSL:1
Brd8-208	ENSMUST00000153569.7	3325	No protein	Retained intron	-	-	TSL:2
Brd8-205	ENSMUST00000127159.1	1702	No protein	Retained intron	-	-	TSL:2

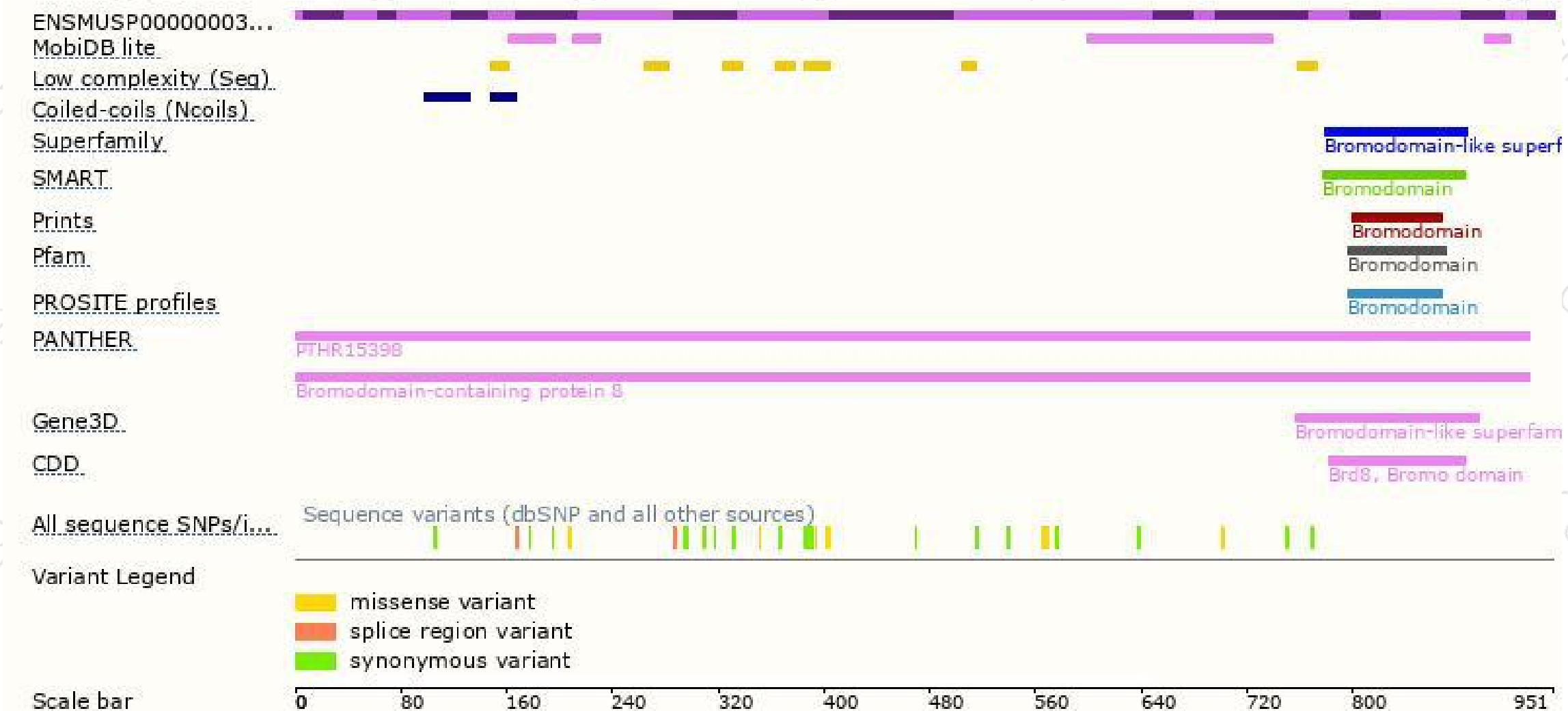
The strategy is based on the design of *Brd8-201* transcript,the transcription is shown below:



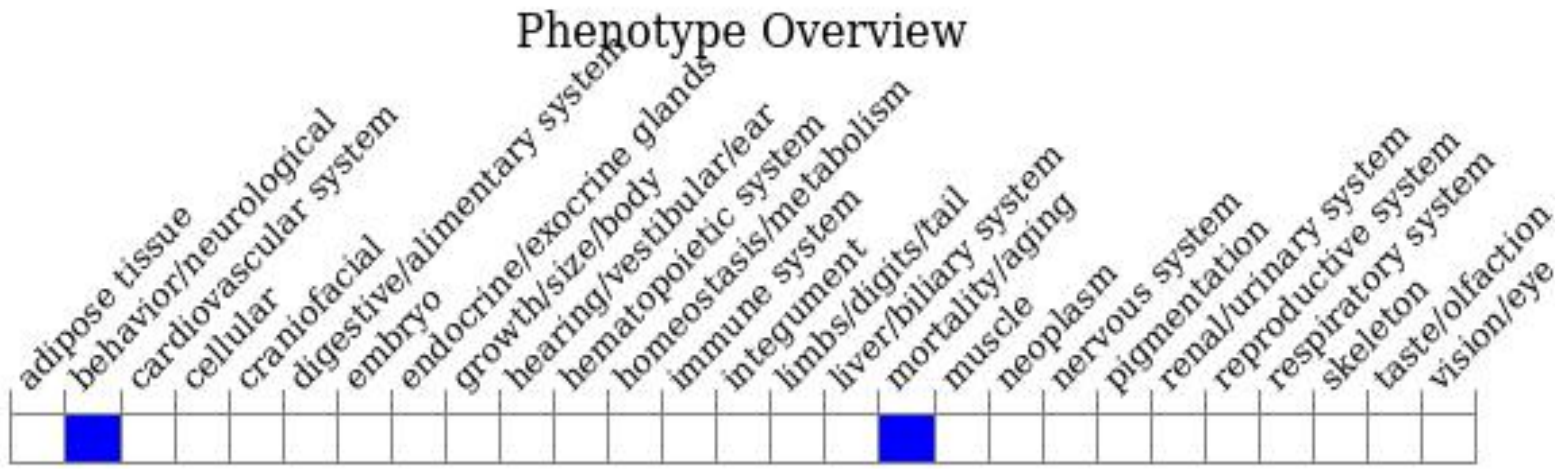
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue.Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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