Brd3 Cas9-KO Strategy

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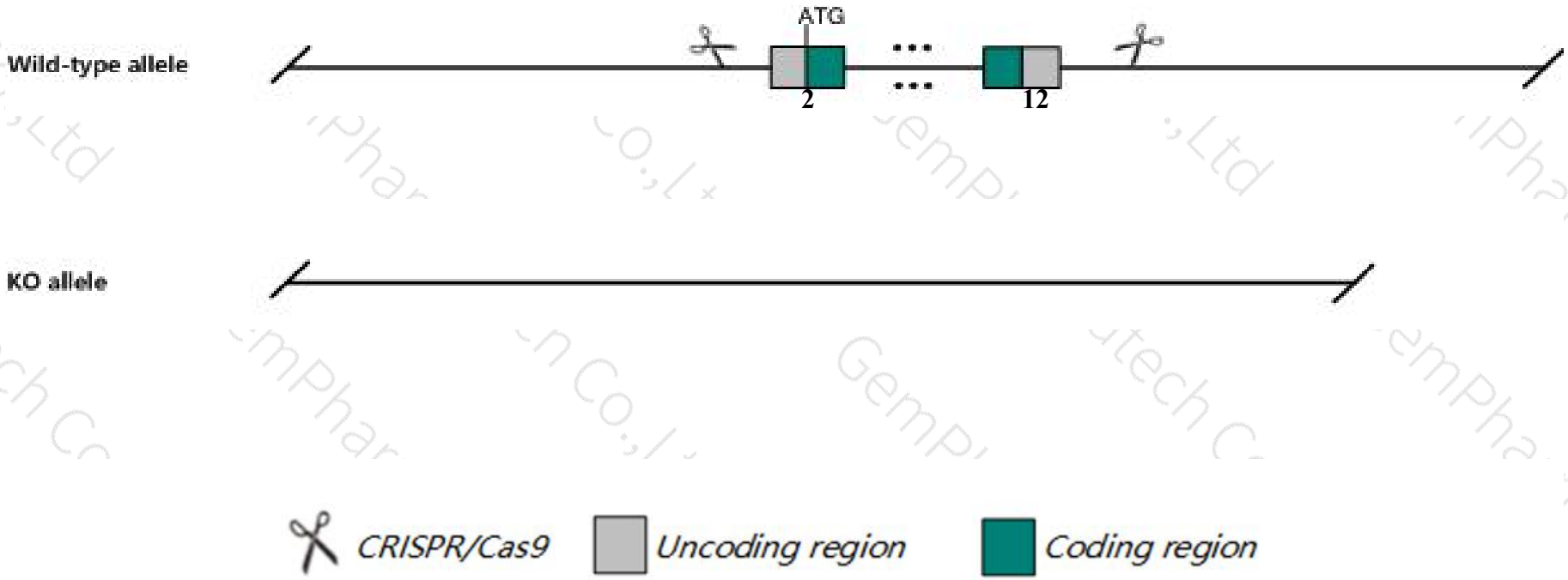
Design Date: 2020-2-17

Project Overview

Project Name	***Brd3***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Brd3* gene. The schematic diagram is as follows:



Technical routes

➢ The *Brd3* gene has 10 transcripts. According to the structure of *Brd3* gene, exon2-exon12 of *Brd3-201* (ENSMUST00000028282.14) transcript is recommended as the knockout region.The region contains all of the coding sequence.Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Brd3* gene. The brief process is as follows: CRISPR/Cas9 system w

Notice

➢ The *Brd3* 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）

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Brd3 bromodomain containing 3 [Mus musculus (house mouse)]

Gene ID: 67382, updated on 3-Feb-2019

Summary

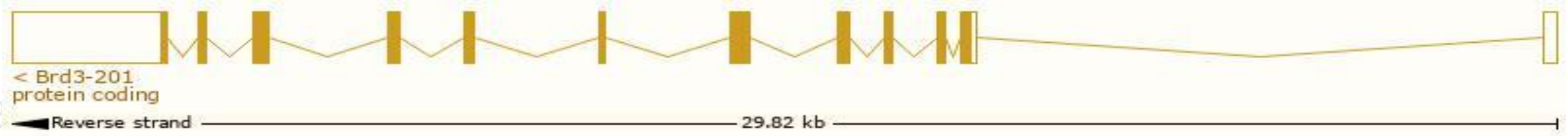
Official Symbol	Brd3 provided by MGI
Official Full Name	bromodomain containing 3 provided by MGI
Primary source	MGI:MGI:1914632
See related	Ensembl:ENSMUSG00000026918
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2410084F24Rik, AW060456, Fsrg2, ORFX, RINGL3
Expression	Ubiquitous expression in CNS E11.5 (RPKM 15.9), limb E14.5 (RPKM 14.1) and 28 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

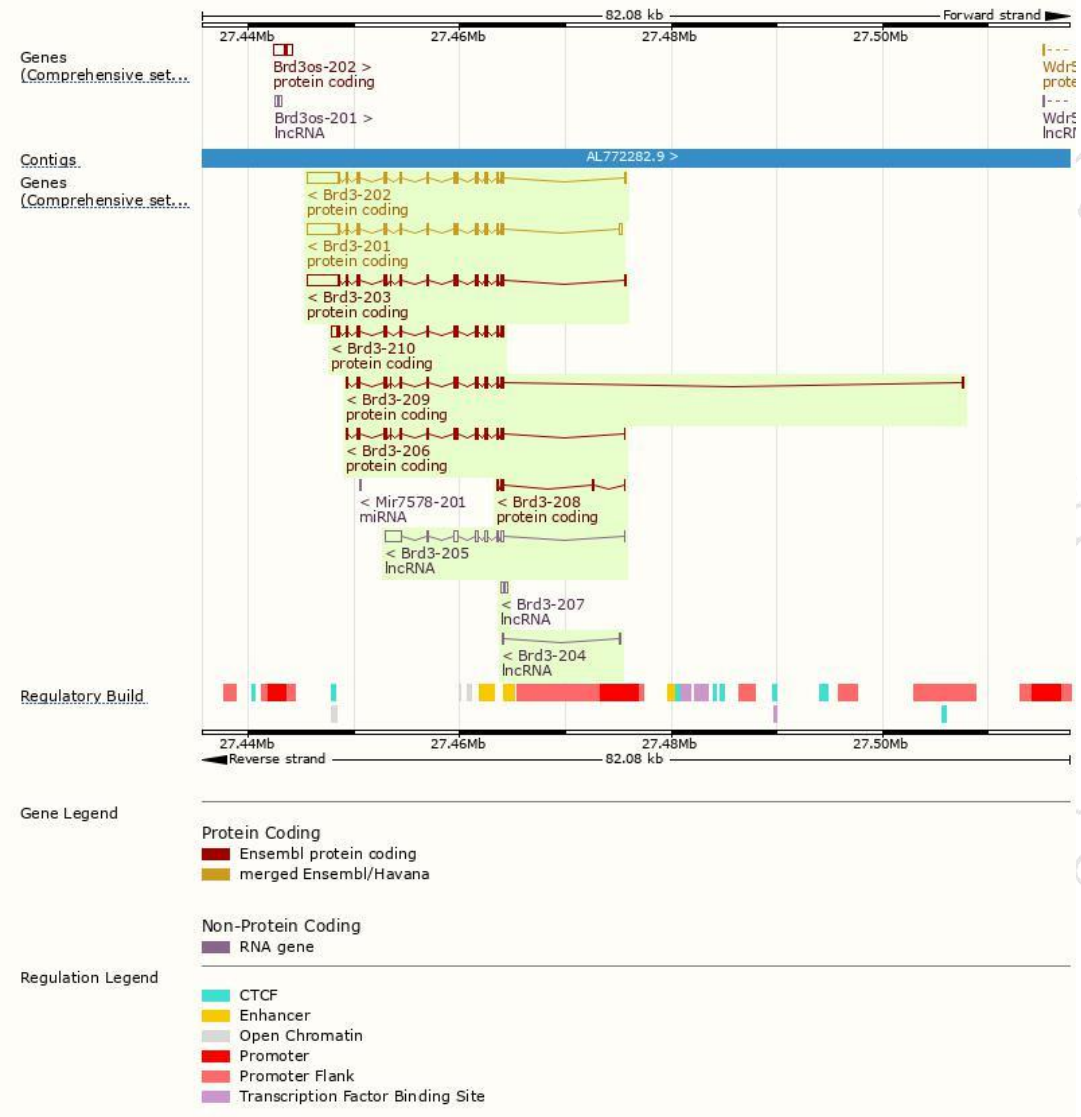
The gene has 10 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Brd3-201	ENSMUST00000028282.14	5419	726aa	Protein coding	CCDS15828	Q3TUI3 Q8K2F0	TSL:5 GENCODE basic APPRIS P3
Brd3-203	ENSMUST00000113941.8	5289	743aa	Protein coding	CCDS50546	Q5CCJ9 Q8K2F0	TSL:5 GENCODE basic APPRIS ALT2
Brd3-202	ENSMUST00000077737.12	5272	726aa	Protein coding	CCDS15828	Q3TUI3 Q8K2F0	TSL:1 GENCODE basic APPRIS P3
Brd3-210	ENSMUST00000164296.7	2791	726aa	Protein coding	CCDS15828	Q3TUI3 Q8K2F0	TSL:5 GENCODE basic APPRIS P3
Brd3-209	ENSMUST00000154316.7	2316	682aa	Protein coding	-	A2AKA9	CDS 3' incomplete TSL:5
Brd3-206	ENSMUST00000138693.7	2221	682aa	Protein coding	-	A2AKA9	CDS 3' incomplete TSL:5
Brd3-208	ENSMUST00000147736.1	437	90aa	Protein coding	-	A2AKB0	CDS 3' incomplete TSL:3
Brd3-205	ENSMUST00000130932.1	2893	No protein	lncRNA	-	-	TSL:1
Brd3-207	ENSMUST00000144758.1	563	No protein	lncRNA	-	-	TSL:3
Brd3-204	ENSMUST00000126059.1	331	No protein	lncRNA	-	-	TSL:2

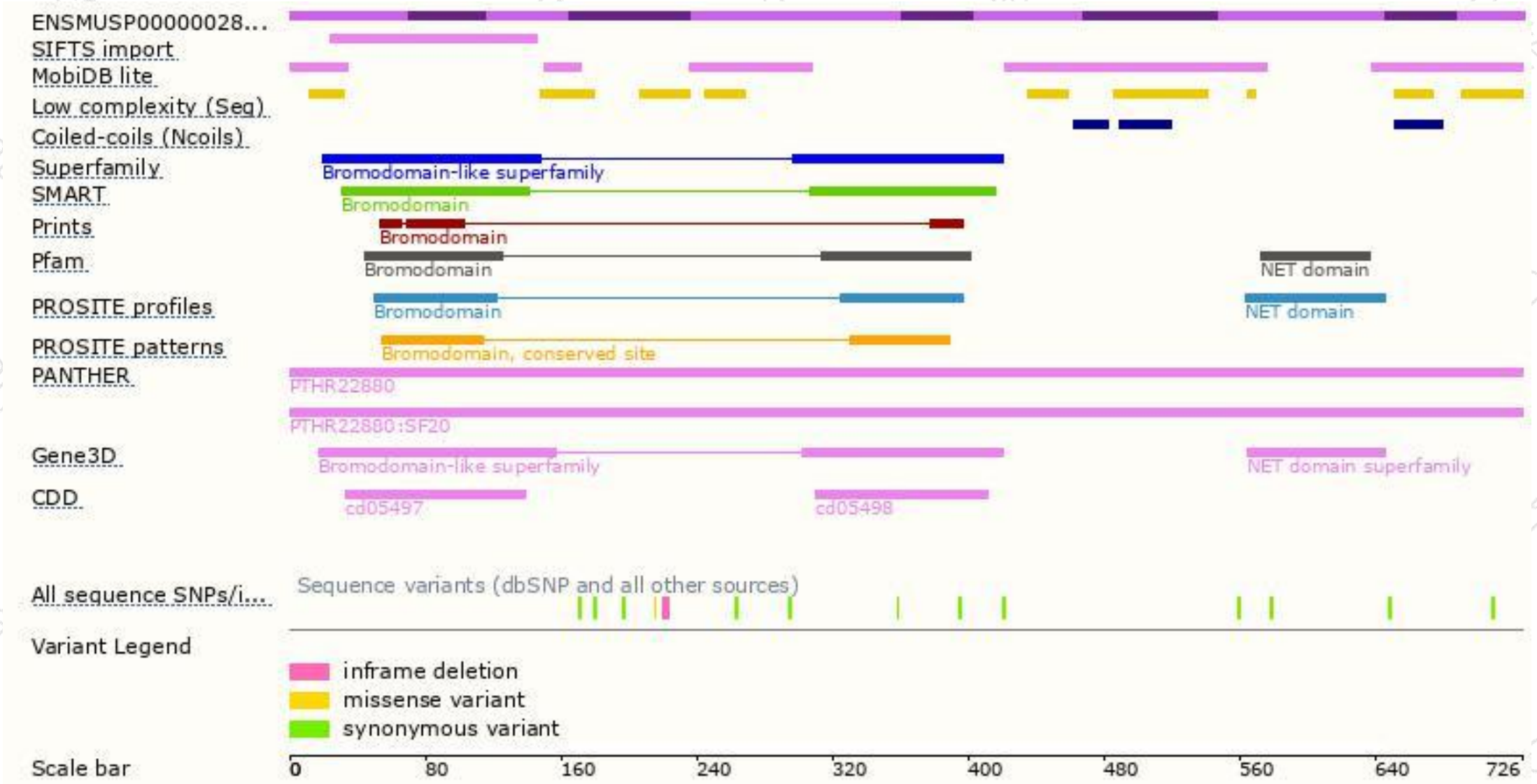
The strategy is based on the design of *Brd3-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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