

Brcc3 Cas9-CKO Strategy

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Project Overview

Project Name

Brcc3

Project type

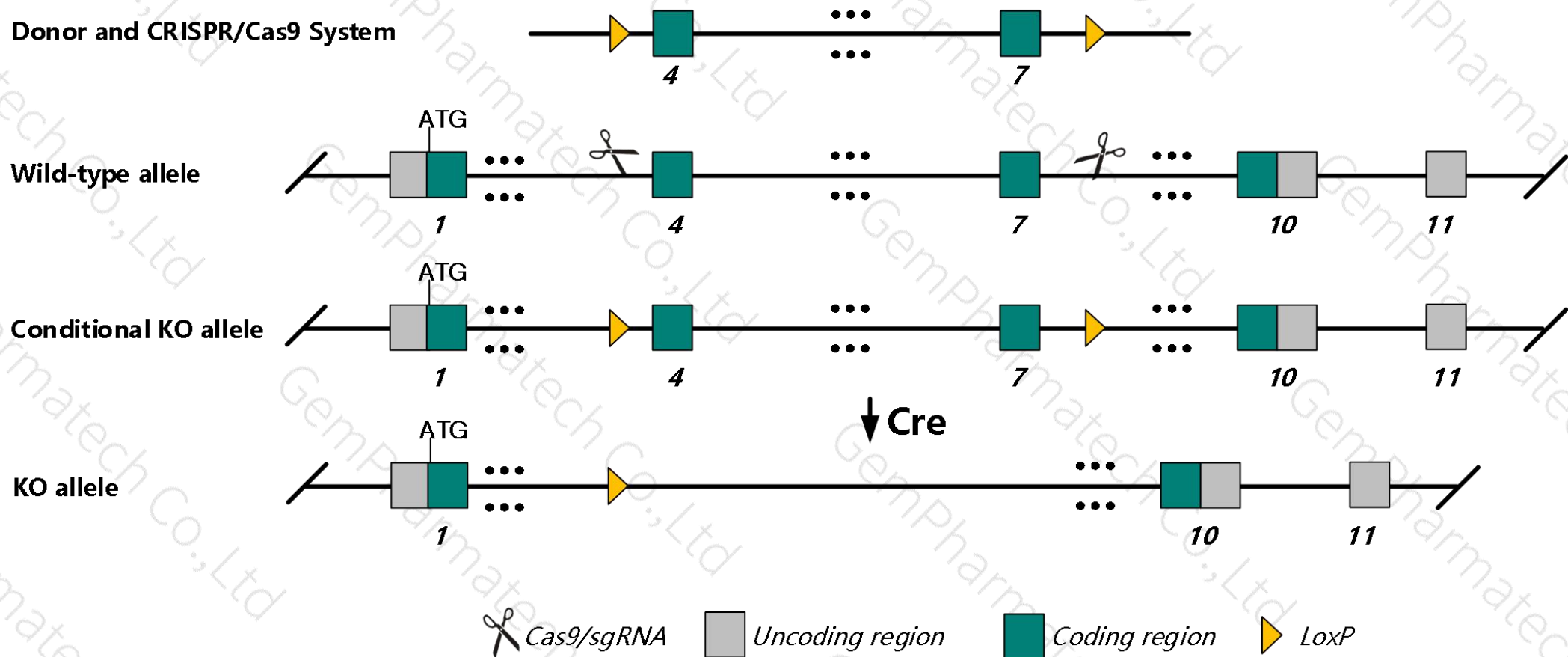
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Brcc3* gene. The schematic diagram is as follows:



- The *Brcc3* gene has 7 transcripts. According to the structure of *Brcc3* gene, exon4-exon7 of *Brcc3-201* (ENSMUST00000033544.13) transcript is recommended as the knockout region. The region contains 353bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Brcc3* gene. The brief process is as follows: CRISPR/Cas9 system 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 will be 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.

Notice

- The *Brcc3* gene is located on the ChrX. 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)

Brcc3 BRCA1/BRCA2-containing complex, subunit 3 [*Mus musculus* (house mouse)]

Gene ID: 210766, updated on 31-Jan-2019

Summary

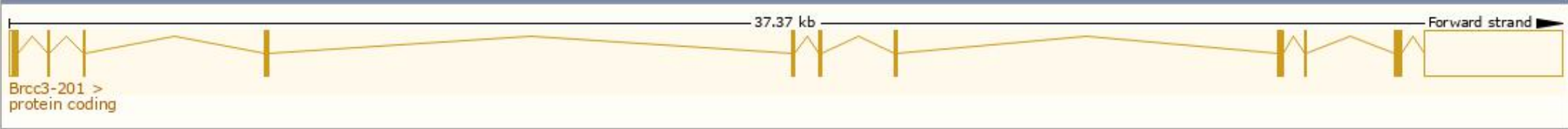
Official Symbol	Brcc3 provided by MGI
Official Full Name	BRCA1/BRCA2-containing complex, subunit 3 provided by MGI
Primary source	MGI:MGI:2389572
See related	Ensembl:ENSMUSG00000031201
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	C6.1A
Expression	Broad expression in CNS E11.5 (RPKM 5.2), liver E14 (RPKM 5.1) and 24 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

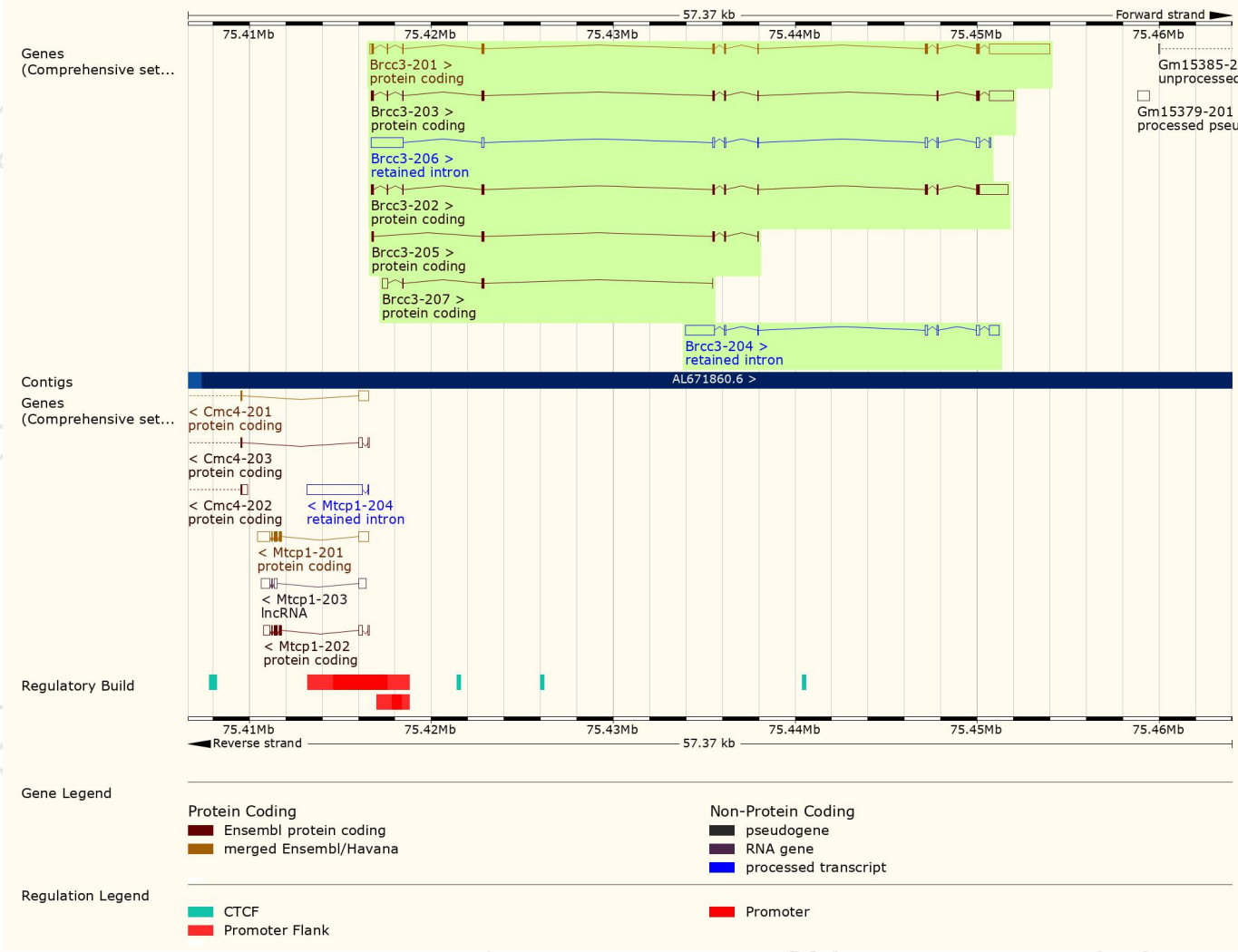
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Brcc3-201	ENSMUST00000033544.13	4310	291aa	Protein coding	CCDS41031	P46737	TSL:1 GENCODE basic APPRIS P2
Brcc3-202	ENSMUST00000114074.7	2473	291aa	Protein coding	CCDS41031	P46737	TSL:1 GENCODE basic APPRIS P2
Brcc3-203	ENSMUST00000118428.7	2093	247aa	Protein coding	-	P46737	TSL:5 GENCODE basic APPRIS ALT2
Brcc3-205	ENSMUST00000133781.7	479	158aa	Protein coding	-	A3KGA8	CDS 3' incomplete TSL:5
Brcc3-207	ENSMUST00000152228.2	473	50aa	Protein coding	-	E9Q0P6	CDS 3' incomplete TSL:5
Brcc3-204	ENSMUST00000124321.1	2614	No protein	Retained intron	-	-	TSL:1
Brcc3-206	ENSMUST00000151938.7	2521	No protein	Retained intron	-	-	TSL:2

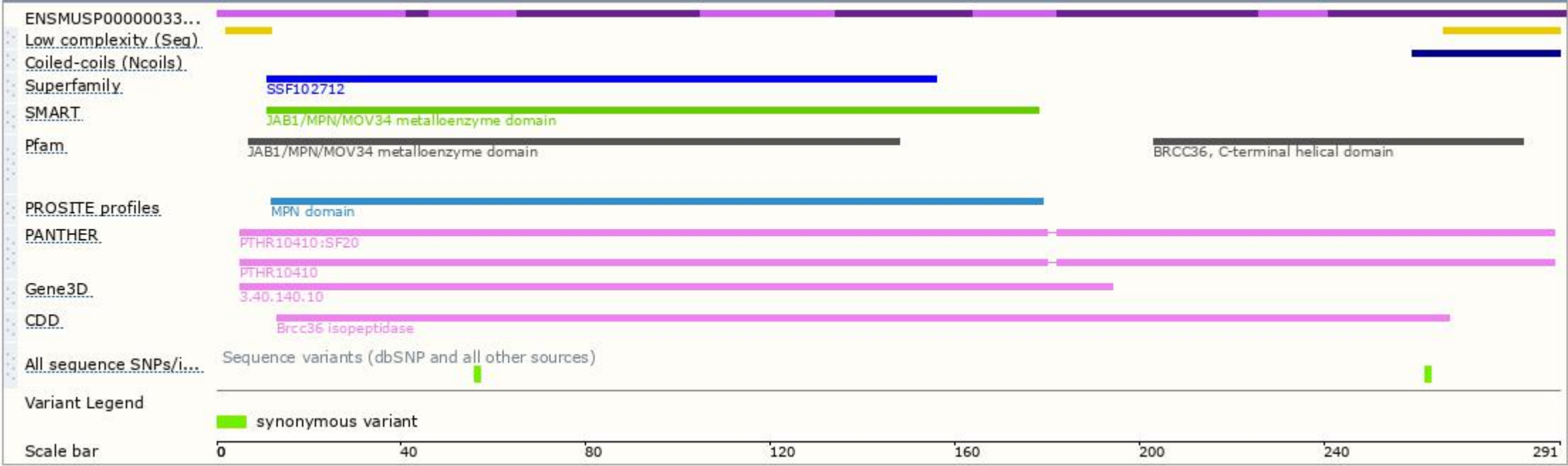
The strategy is based on the design of *Brcc3-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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