Apbb1ip Cas9-CKO Strategy

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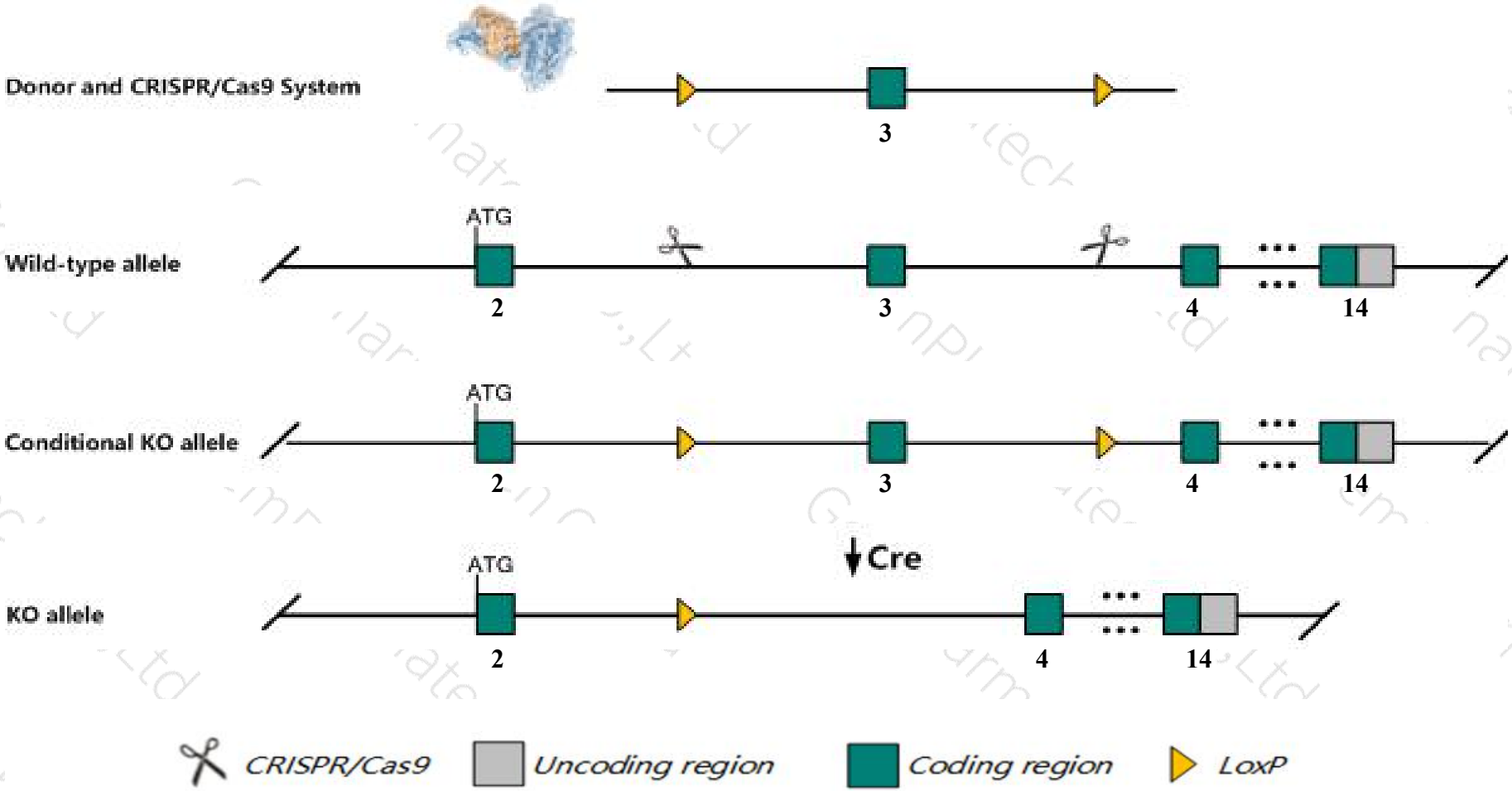
Project Overview

Project Name	***Apbb1ip***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Apbb1ip* gene. The schematic diagram is as follows:



Technical routes

- The *Apbb1ip* gene has 4 transcripts. According to the structure of *Apbb1ip* gene, exon3 of *Apbb1ip-201* (ENSMUST00000014290.14) transcript is recommended as the knockout region.The region contains 88bp coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Apbb1ip* 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

➢ According to the existing MGI data,Mice homozygous for a knock-out allele are viable, fertile and healthy with no apparent defects in platelet integrin activation and function, hemostasis, or arterial thrombus formation.

➢ The *Apbb1ip* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information （NCBI）

集萃药康 GemPharmatech

Apbb1ip amyloid beta (A4) precursor protein-binding, family B, member 1 interacting protein [Mus musculus (house mouse)]

Gene ID: 54519, updated on 31-Jan-2019

Summary

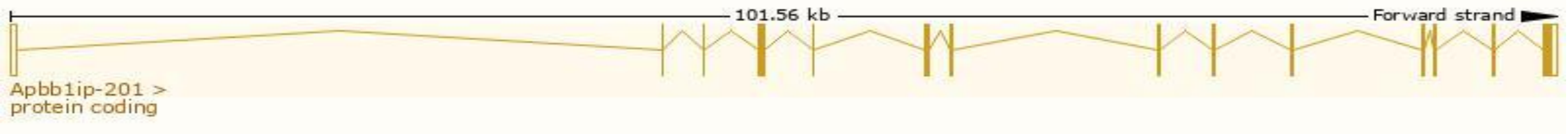
Official Symbol	Apbb1ip provided by MGI
Official Full Name	amyloid beta (A4) precursor protein-binding, family B, member 1 interacting protein provided by MGI
Primary source	MGI:MGI:1861354
See related	Ensembl:ENSMUSG00000026786
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9930118P07Rik, Prp48
Expression	Broad expression in thymus adult (RPKM 9.0), spleen adult (RPKM 6.8) and 15 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

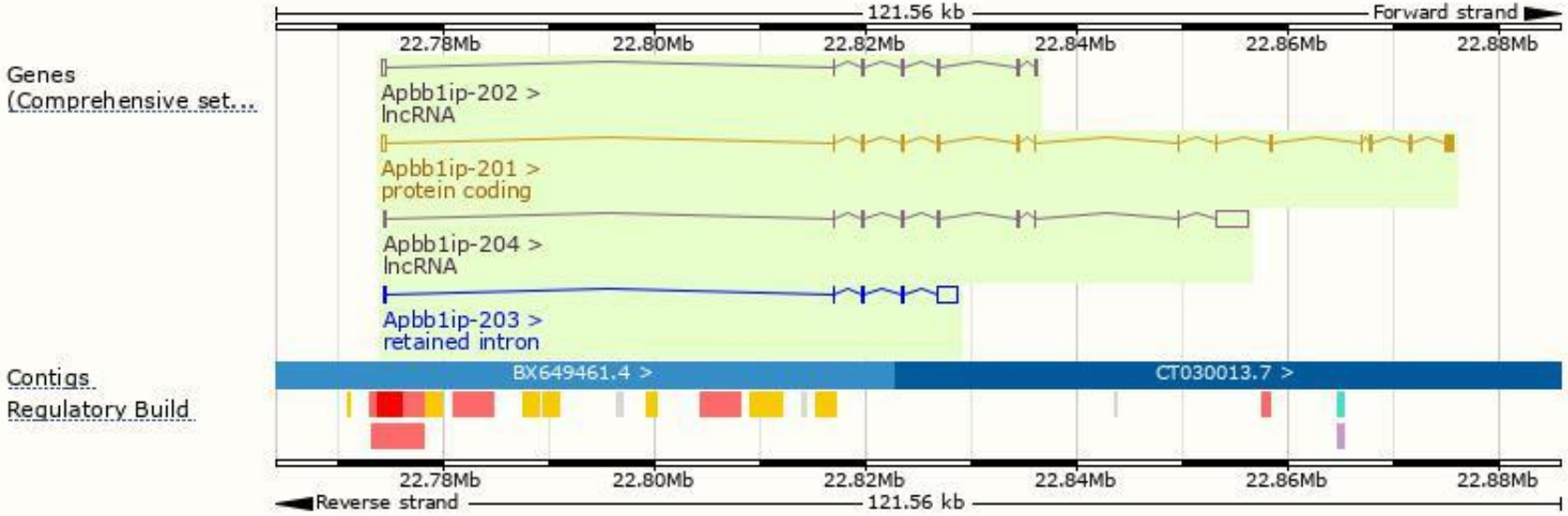
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Apbb1ip-201	ENSMUST00000014290.14	2773	670aa	Protein coding	CCDS38056	B1AYC9 Q8R5A3	TSL:1 GENCODE basic APPRIS P1
Apbb1ip-203	ENSMUST00000132993.1	2276	No protein	Retained intron	-	-	TSL:1
Apbb1ip-204	ENSMUST00000148315.7	4061	No protein	lncRNA	-	-	TSL:1
Apbb1ip-202	ENSMUST00000131195.7	1356	No protein	lncRNA	-	-	TSL:1

The strategy is based on the design of *Apbb1ip-201* transcript,The transcription is shown below



Genomic location distribution



Gene Legend

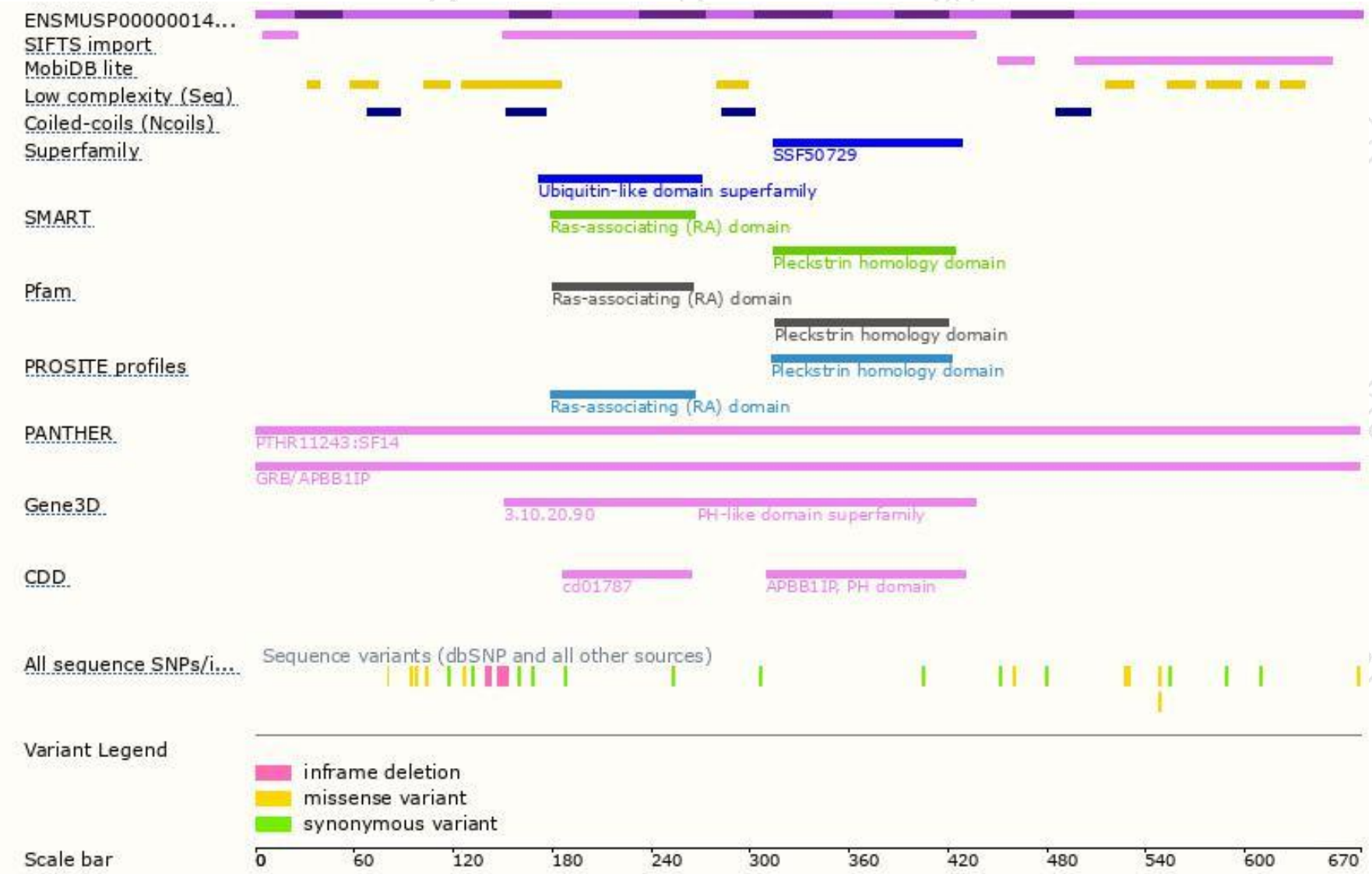
Protein Coding
- merged Ensembl/Havana

Non-Protein Coding
- processed transcript
- RNA gene

Regulation Legend

- CTCF
- Enhancer
- Open Chromatin
- Promoter
- Promoter Flank
- Transcription Factor Binding Site

Protein domain



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

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