

Ankrd42 Cas9-CKO Strategy

Designer: Jia Yu

Reviewer: Xiaojing Li

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Project Overview

Project Name

Ankrd42

Project type

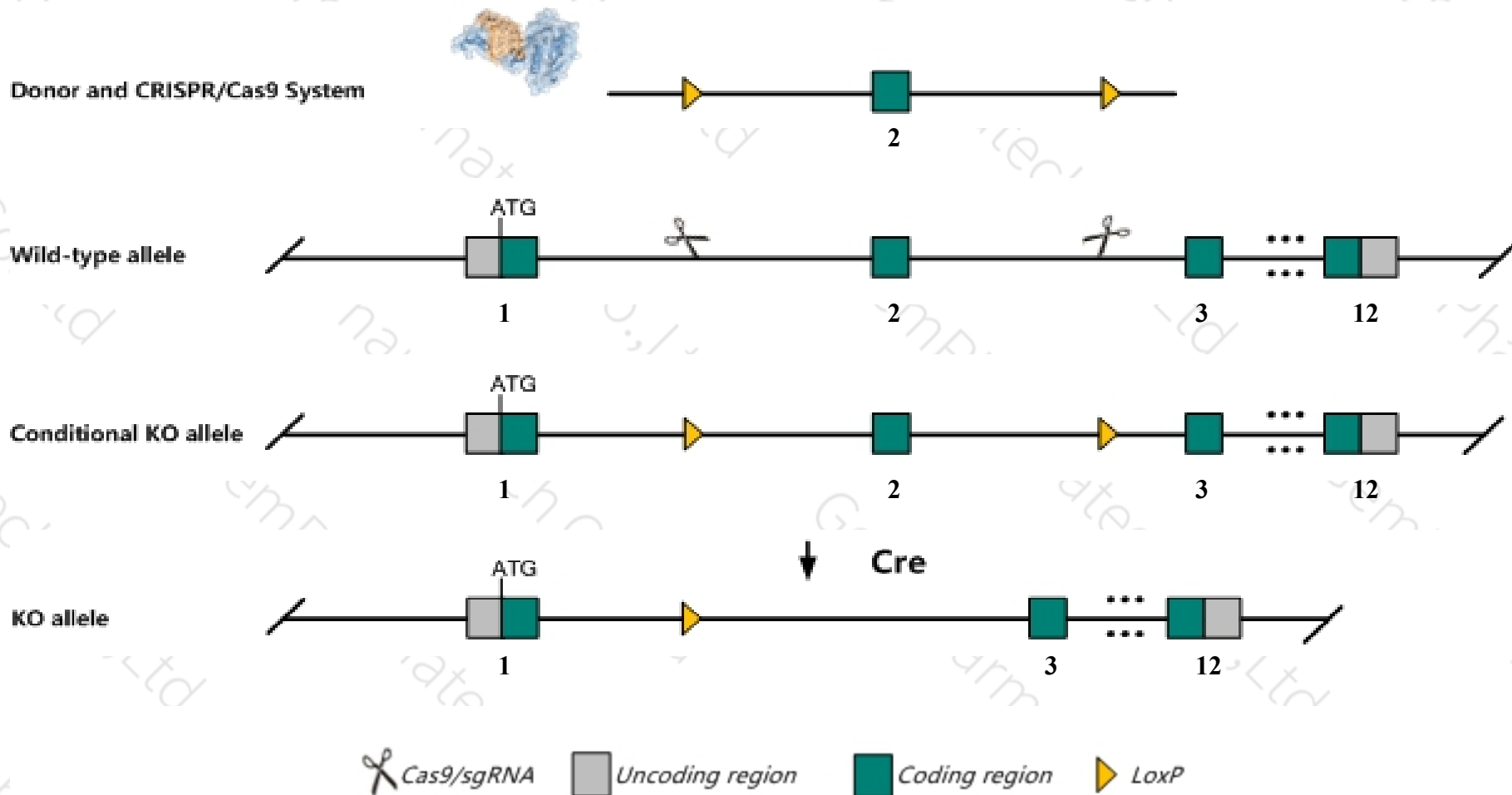
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ankrd42* gene. The schematic diagram is as follows:



- The *Ankrd42* gene has 9 transcripts. According to the structure of *Ankrd42* gene, exon2 of *Ankrd42*-202(ENSMUST00000118157.7) transcript is recommended as the knockout region. The region contains 164bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ankrd42* 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 *Ankrd42* gene is located on the Chr7. 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)

Ankrd42 ankyrin repeat domain 42 [Mus musculus (house mouse)]

Gene ID: 73845, updated on 13-Mar-2020

Summary



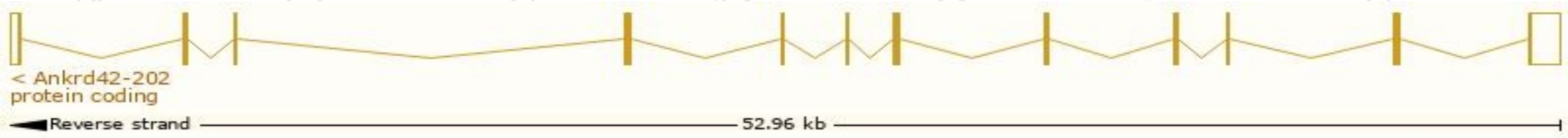
Official Symbol	Ankrd42 provided by MGI
Official Full Name	ankyrin repeat domain 42 provided by MGI
Primary source	MGI:MGI:1921095
See related	Ensembl:ENSMUSG00000041343
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4931426M20, 4933417L02Rik, Ikbn
Expression	Biased expression in testis adult (RPKM 35.0), CNS E18 (RPKM 2.4) and 2 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

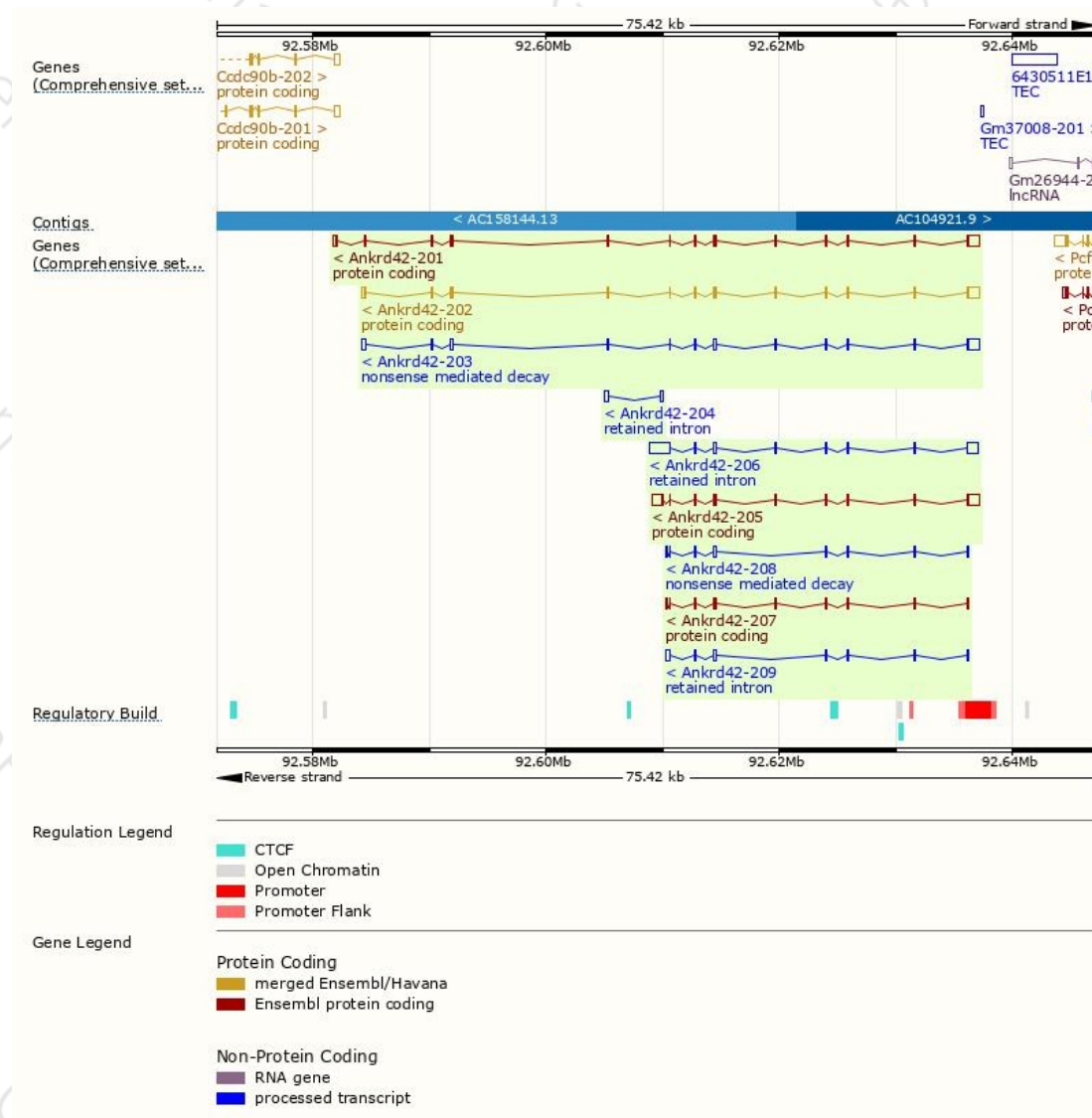
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ankrd42-202	ENSMUST00000118157.7	2782	516aa	Protein coding	CCDS52310	A0A0R4J1P5	TSL:1 GENCODE basic APPRIS P2
Ankrd42-205	ENSMUST00000138267.1	2827	356aa	Protein coding	-	Q3V096	TSL:1 GENCODE basic
Ankrd42-201	ENSMUST00000056106.13	2788	527aa	Protein coding	-	Q3V096	TSL:1 GENCODE basic APPRIS ALT2
Ankrd42-207	ENSMUST00000207131.1	1220	343aa	Protein coding	-	B7ZNV8	TSL:1 GENCODE basic
Ankrd42-203	ENSMUST00000126305.7	2802	163aa	Nonsense mediated decay	-	D6RCX7	TSL:1
Ankrd42-208	ENSMUST00000207151.1	1084	152aa	Nonsense mediated decay	-	A0A140LHD3	TSL:1
Ankrd42-206	ENSMUST00000142971.7	3542	No protein	Retained intron	-	-	TSL:1
Ankrd42-209	ENSMUST00000207971.1	1257	No protein	Retained intron	-	-	TSL:1
Ankrd42-204	ENSMUST00000138215.1	735	No protein	Retained intron	-	-	TSL:3

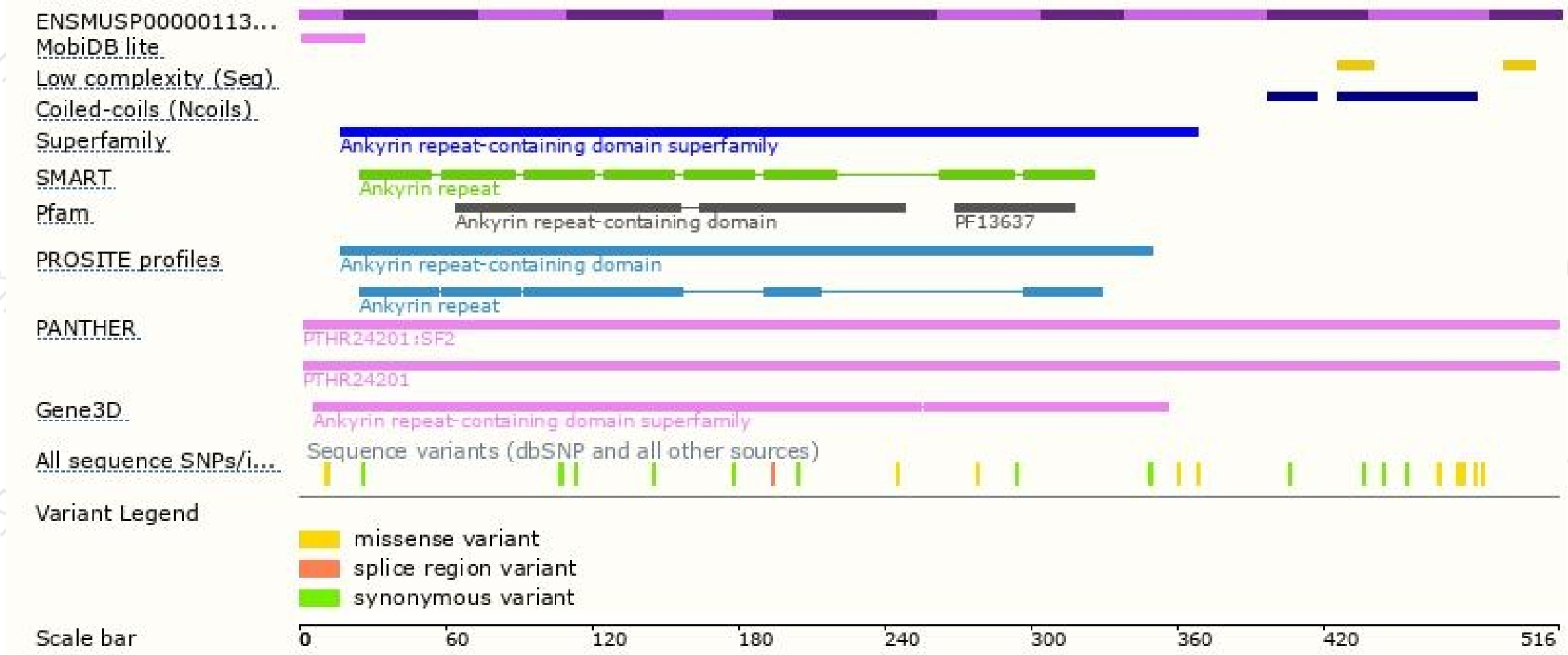
The strategy is based on the design of *Ankrd42-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 025-5864 1534

