

Arel1 Cas9-CKO Strategy

Designer:

Jinling Wang

Design Date:

2019-7-17

Project Overview

Project Name

Arell

Project type

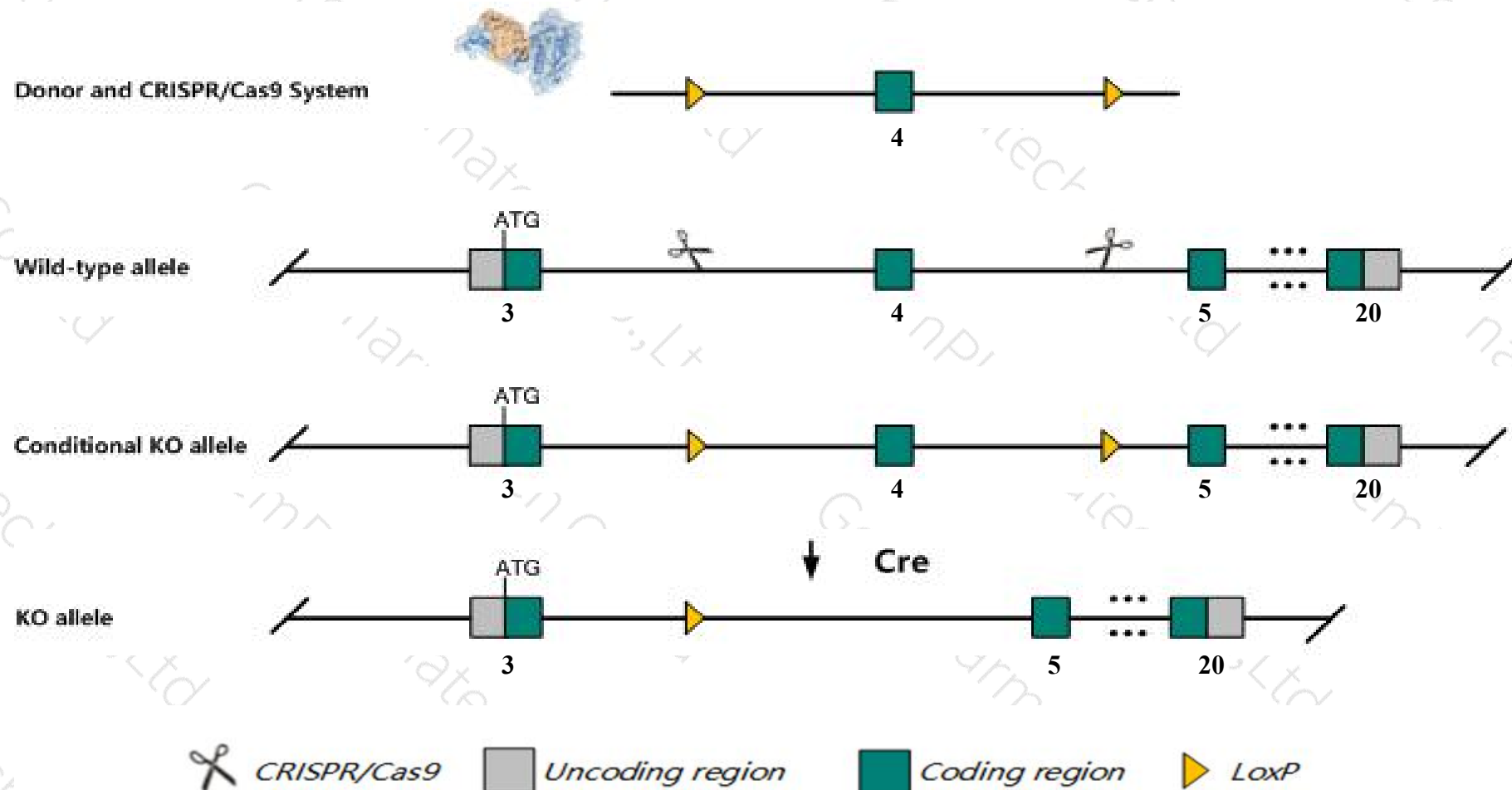
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

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



Technical routes

- The *Arell* gene has 8 transcripts. According to the structure of *Arell* gene, exon4 of *Arell-201* (ENSMUST00000043169.13) transcript is recommended as the knockout region. The region contains 227bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Arell* 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 *Arell* gene is located on the Chr12. 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)

Arel1 apoptosis resistant E3 ubiquitin protein ligase 1 [Mus musculus (house mouse)]

Gene ID: 68497, updated on 31-Jan-2019

Summary



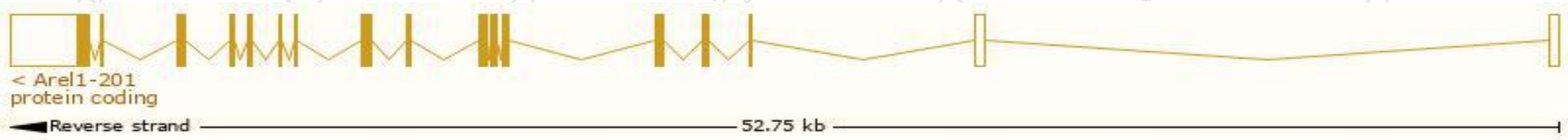
Official Symbol	Arel1 provided by MGI
Official Full Name	apoptosis resistant E3 ubiquitin protein ligase 1 provided by MGI
Primary source	MGI:MGI:1915747
See related	Ensembl:ENSMUSG00000042350
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1110018G07Rik, A1649076, AW610792
Expression	Ubiquitous expression in testis adult (RPKM 22.2), CNS E18 (RPKM 18.7) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

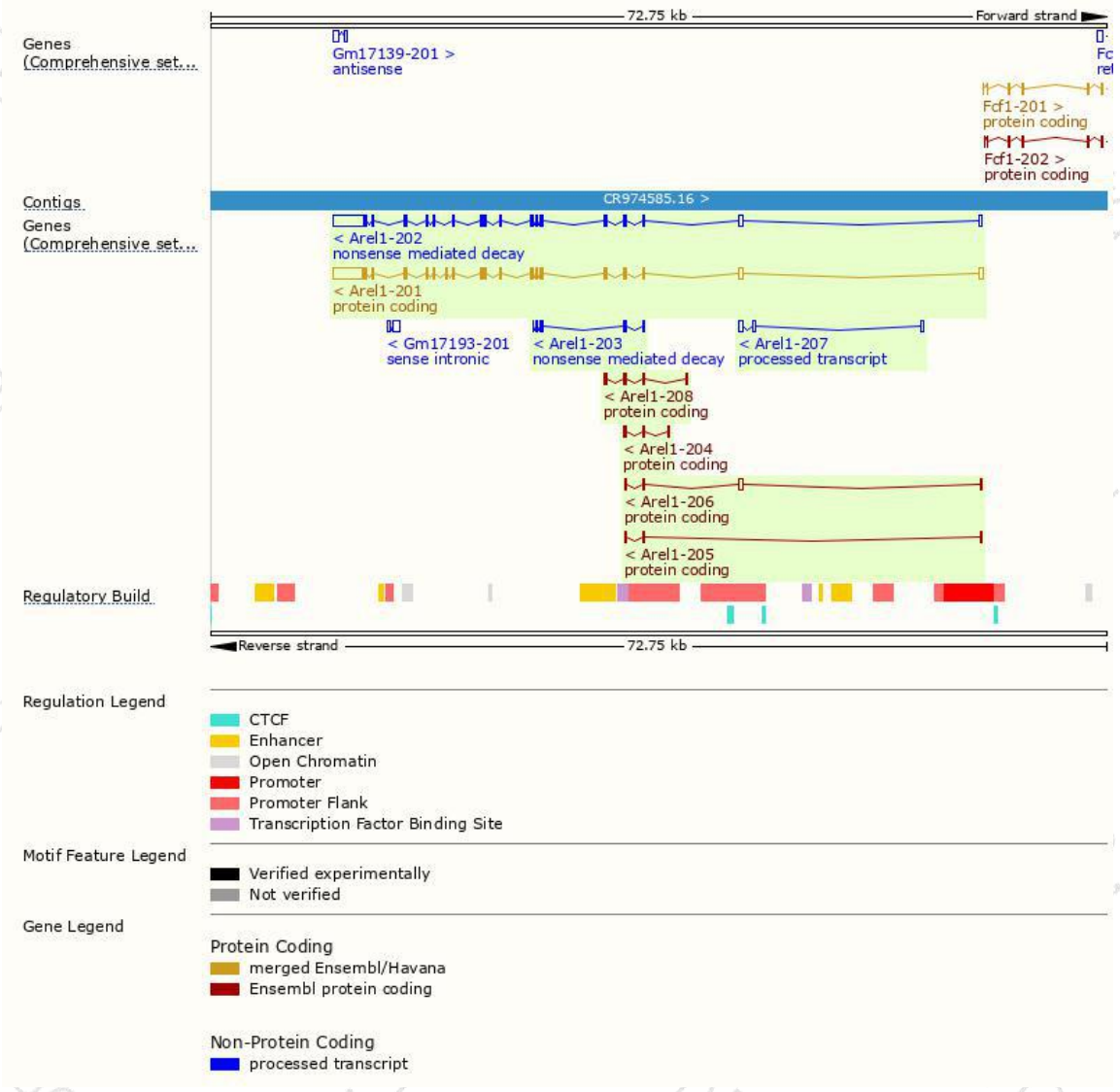
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Are11-201	ENSMUST00000043169.13	5446	823aa	Protein coding	CCDS26051	Q8CHG5	TSL:1 GENCODE basic APPRIS P1
Are11-206	ENSMUST00000167448.7	725	64aa	Protein coding	-	E9Q2W2	CDS 3' incomplete TSL:3
Are11-208	ENSMUST00000169161.7	644	160aa	Protein coding	-	E9PY98	CDS 3' incomplete TSL:2
Are11-205	ENSMUST00000165886.1	369	61aa	Protein coding	-	E9PYA6	CDS 3' incomplete TSL:3
Are11-204	ENSMUST00000165093.7	367	71aa	Protein coding	-	E9PYE5	CDS 3' incomplete TSL:3
Are11-202	ENSMUST00000163231.7	5262	502aa	Nonsense mediated decay	-	E9PZX5	TSL:1
Are11-203	ENSMUST00000163372.7	706	99aa	Nonsense mediated decay	-	E9Q7I2	TSL:3
Are11-207	ENSMUST00000168713.1	668	No protein	Processed transcript	-	-	TSL:3

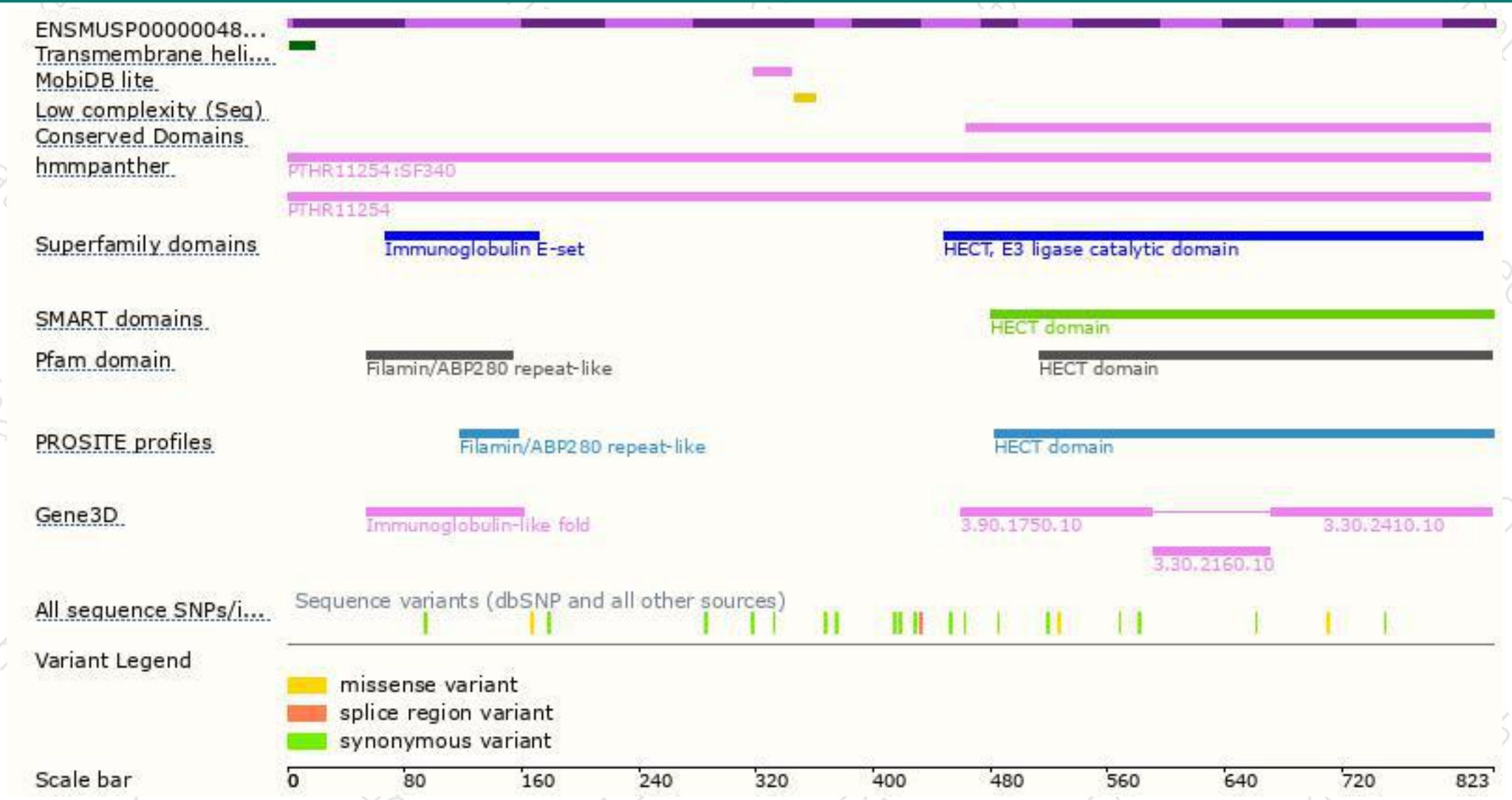
The strategy is based on the design of *Are11-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

