Anxa11 Cas9-CKO Strategy

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Design Date: 2020-5-14

Project Overview

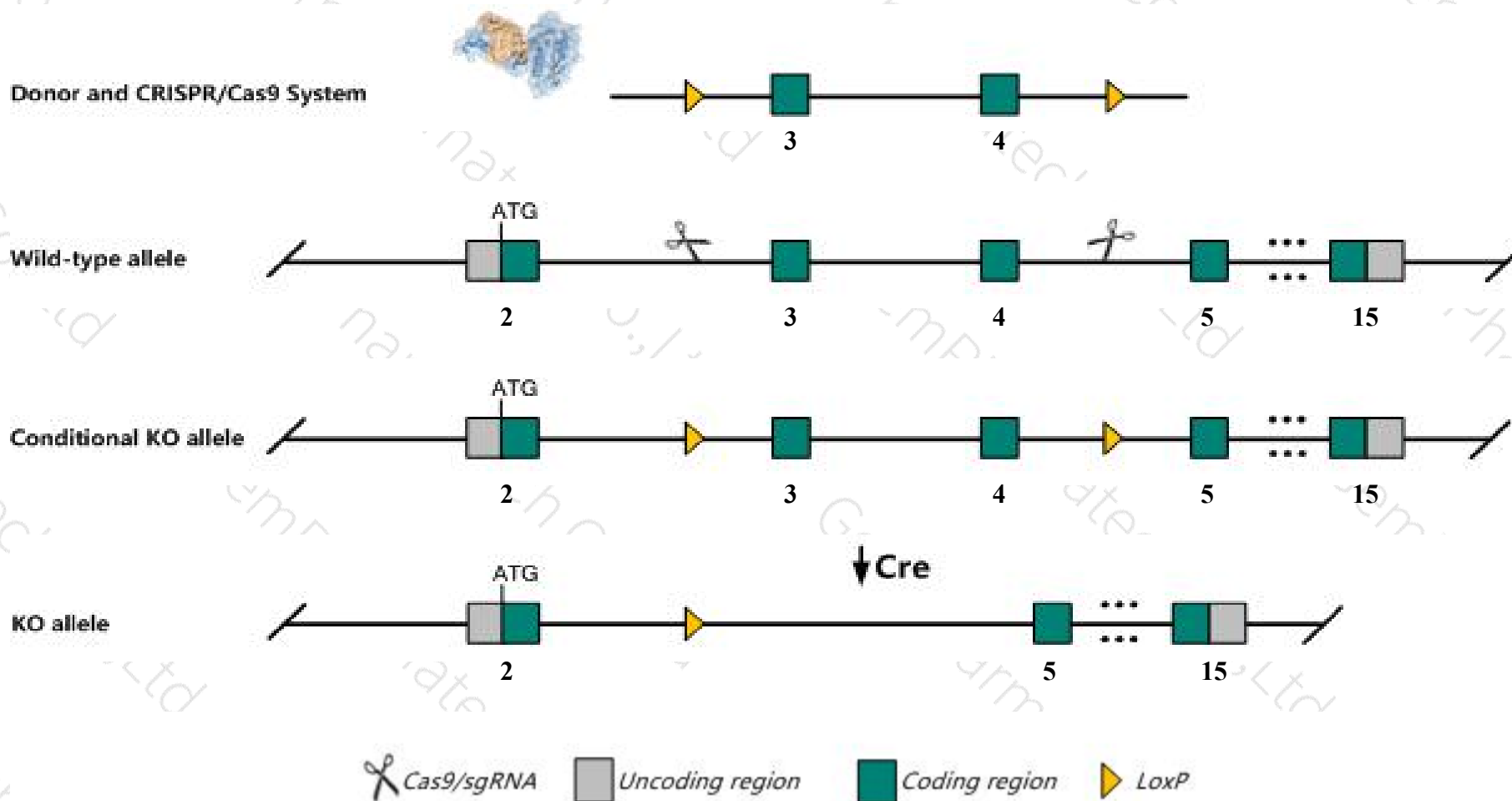|	
Project Name	***Anxa11***
Project type	**Cas9-CKO**
Strain background	**C57BL/6J**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Anxa11* gene. The schematic diagram is as follows:

Technical routes

➤ The *Anxa11* gene has 4 transcripts. According to the structure of *Anxa11* gene, exon3-exon4 of *Anxa11-201* (ENSMUST00000022416.14) transcript is recommended as the knockout region.The region contains 500bp coding sequence. Knock out the region will result in disruption of protein function.

➤ In this project we use CRISPR/Cas9 technology to modify *Anxa11* 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/6J 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/6J 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.

Notice

➢ The *Anxa11* gene is located on the Chr14. 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 destroys the Anxa1ios-201 gene.

➢ The insertion of 3-terminal loxP destroyed the *Anxa11*-203.

➢ 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）

Anxa11 annexin A11 [Mus musculus (house mouse)]

Gene ID: 11744, updated on 13-Mar-2020

▲ Summary   ⌃ ?

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Official Symbol	Anxa11 provided by MGI
Official Full Name	annexin A11 provided by MGI
Primary source	MGI:MGI:108481
See related	Ensembl:ENSMUSG00000021866
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	A830099O17Rik, Anx11
Expression	Broad expression in colon adult (RPKM 118.5), duodenum adult (RPKM 56.1) and 20 other tissuesSee 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
Anxa11-201	ENSMUST00000022416.14	2394	503aa	Protein coding	CCDS26875	P97384	TSL:1 GENCODE basic APPRIS P1
Anxa11-202	ENSMUST00000112364.7	1625	447aa	Protein coding	-	D3Z7U0	TSL:1 GENCODE basic
Anxa11-204	ENSMUST00000133547.1	2733	No protein	Retained intron	-	-	TSL:2
Anxa11-203	ENSMUST00000124704.7	2643	No protein	Retained intron	-	-	TSL:2

The strategy is based on the design of *Anxa11-201* transcript,The transcription is shown below
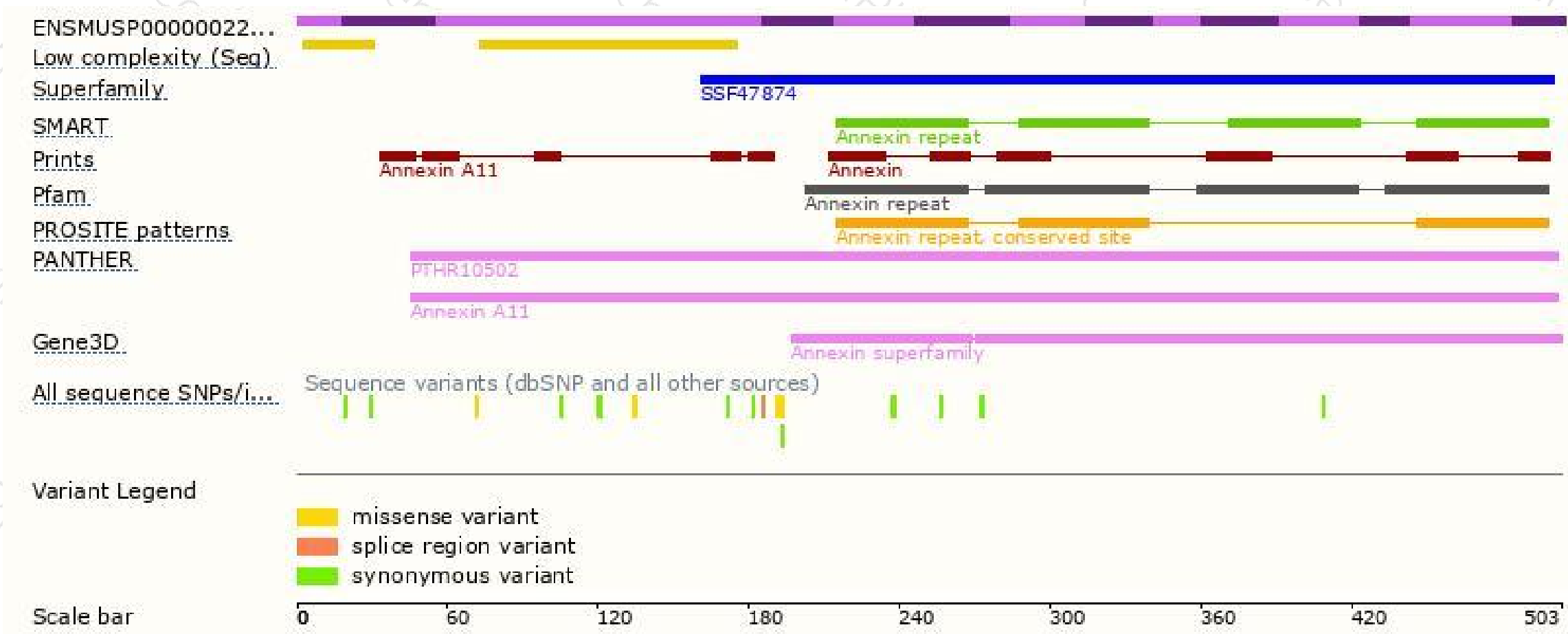
Genomic location distribution
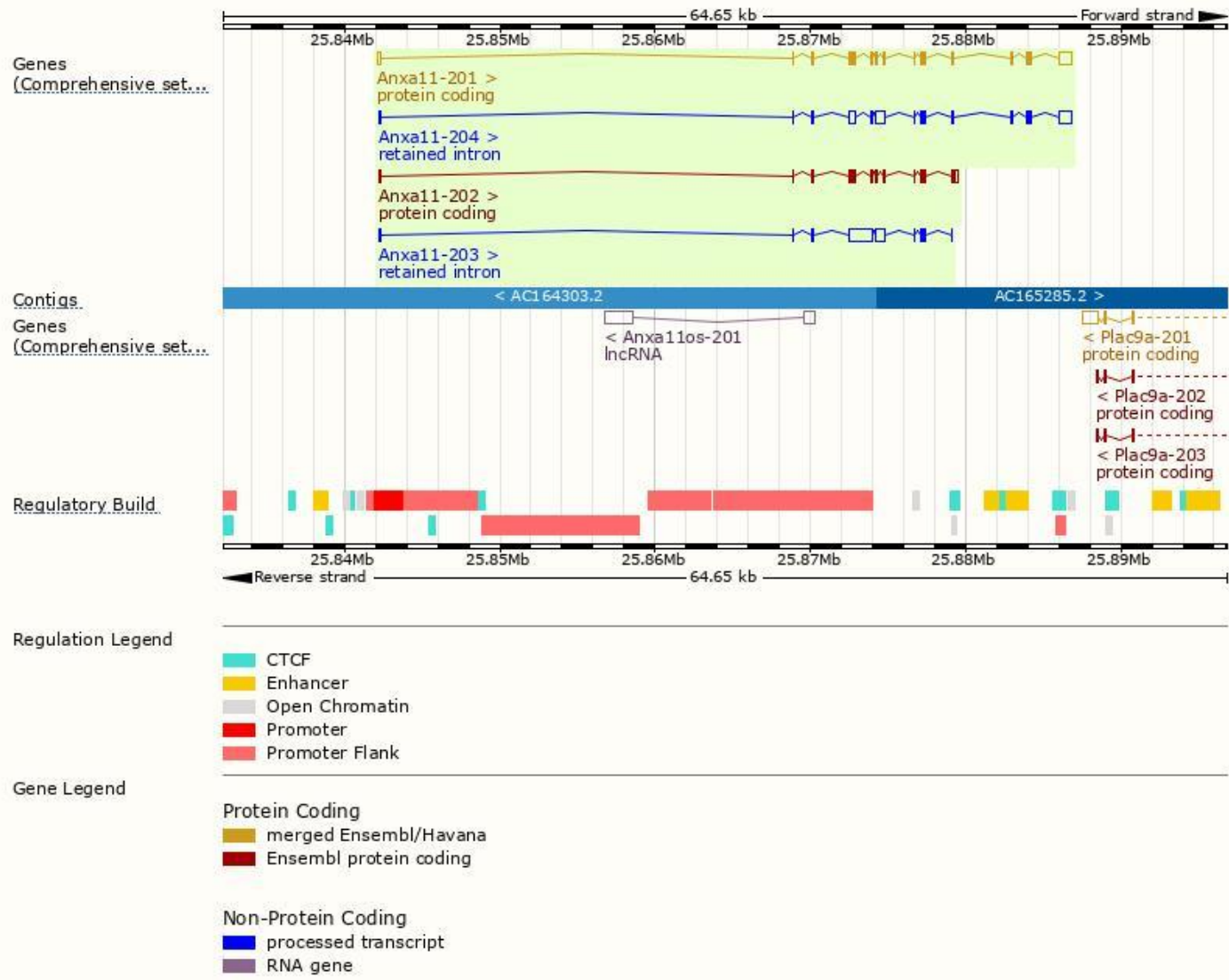
Protein domain

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