

Anxa5 Cas9-CKO Strategy

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Reviewer:

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Design Date:

2019-12-16

Project Overview

Project Name

Anxa5

Project type

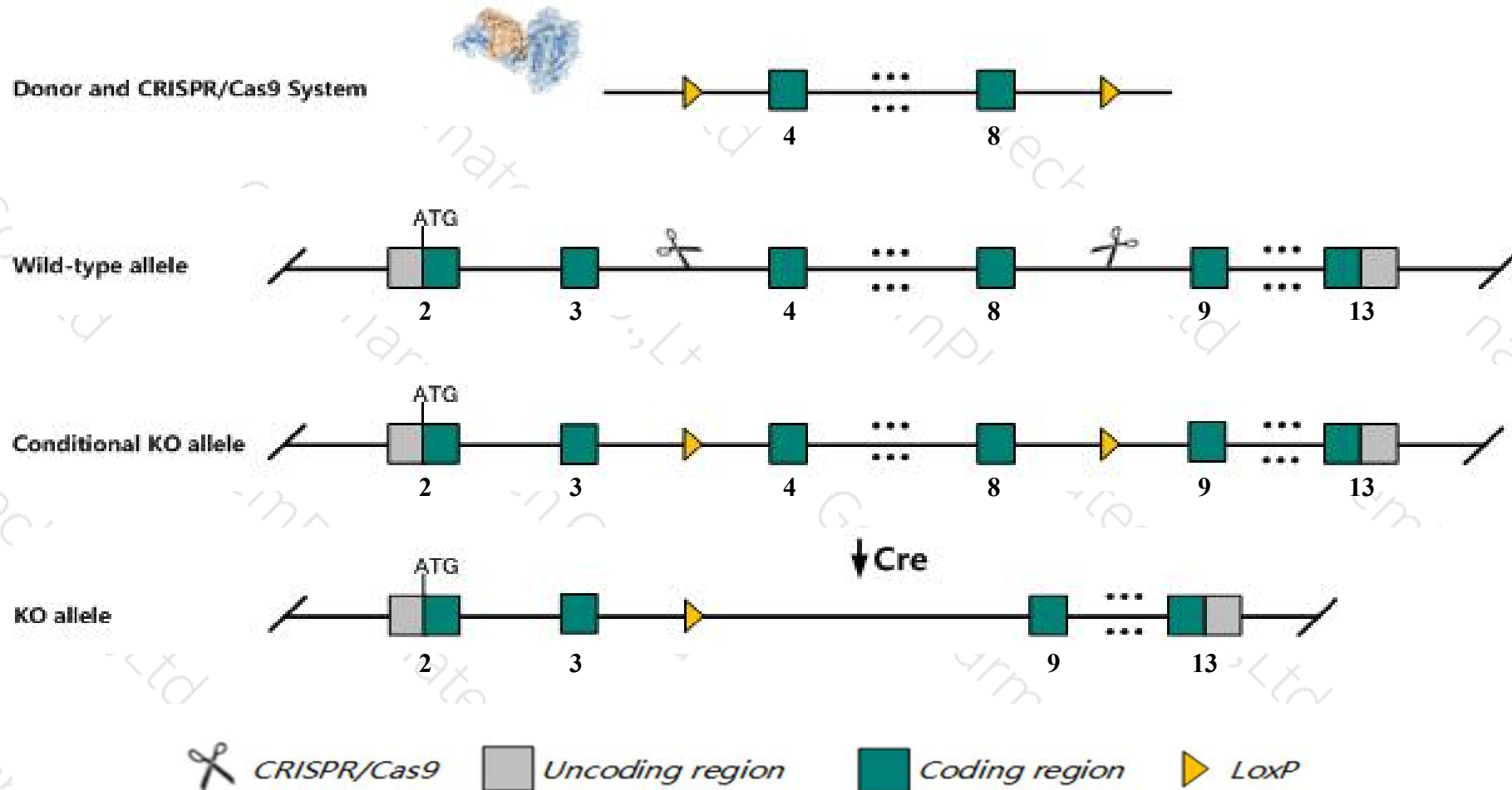
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Anxa5* gene. The schematic diagram is as follows:



- The *Anxa5* gene has 3 transcripts. According to the structure of *Anxa5* gene, exon4-exon8 of *Anxa5-201* (ENSMUST00000029266.13) transcript is recommended as the knockout region. The region contains 437bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Anxa5* 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.

- According to the existing MGI data, Homozygous null mice are viable, fertile, and develop normally. Bone development and maintenance are normal, as are clinical-chemical parameters.
- The *Anxa5* gene is located on the Chr3. 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)

Anxa5 annexin A5 [*Mus musculus* (house mouse)]

Gene ID: 11747, updated on 3-Nov-2019

Summary

Official Symbol	Anxa5 provided by MGI
Official Full Name	annexin A5 provided by MGI
Primary source	MGI:MGI:106008
See related	Ensembl:ENSMUSG00000027712
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	Anx5; R74653
Expression	Broad expression in lung adult (RPKM 179.5), adrenal adult (RPKM 154.2) and 27 other tissues See more
Orthologs	human all

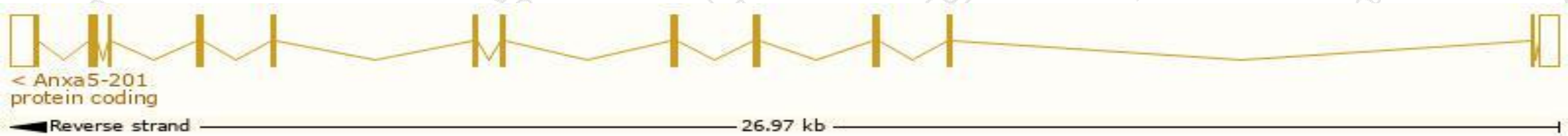


Transcript information (Ensembl)

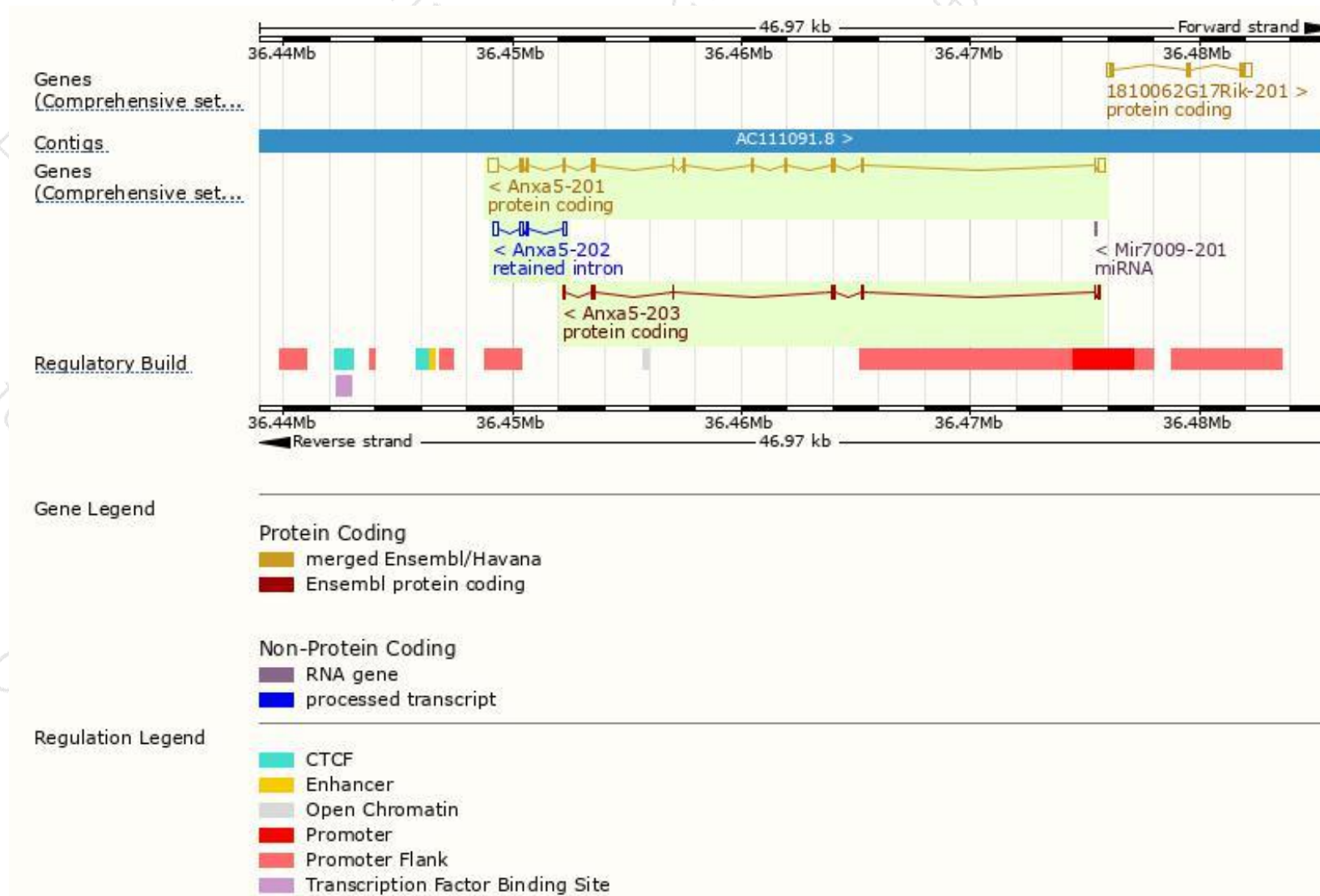
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Anxa5-201	ENSMUST00000029266.13	1731	319aa	Protein coding	CCDS38416	P48036	TSL:1 GENCODE basic APPRIS P1
Anxa5-203	ENSMUST00000199478.1	527	137aa	Protein coding	-	A0A0G2JGQ0	CDS 3' incomplete TSL:3
Anxa5-202	ENSMUST00000196097.1	567	No protein	Retained intron	-	-	TSL:2

The strategy is based on the design of *Anxa5-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain

ENSMUSP00000029...

[Superfamily](#)

SSF47874

[SMART](#)

[Prints](#)

Annexin repeat

Annexin A5

Annexin

[Pfam](#)

Annexin repeat

[PROSITE patterns](#)

[PANTHER](#)

Annexin repeat conserved site

Annexin A5

PTHR10502

[Gene3D](#)

Annexin superfamily

[All sequence SNPs/i...](#)

Sequence variants (dbSNP and all other sources)

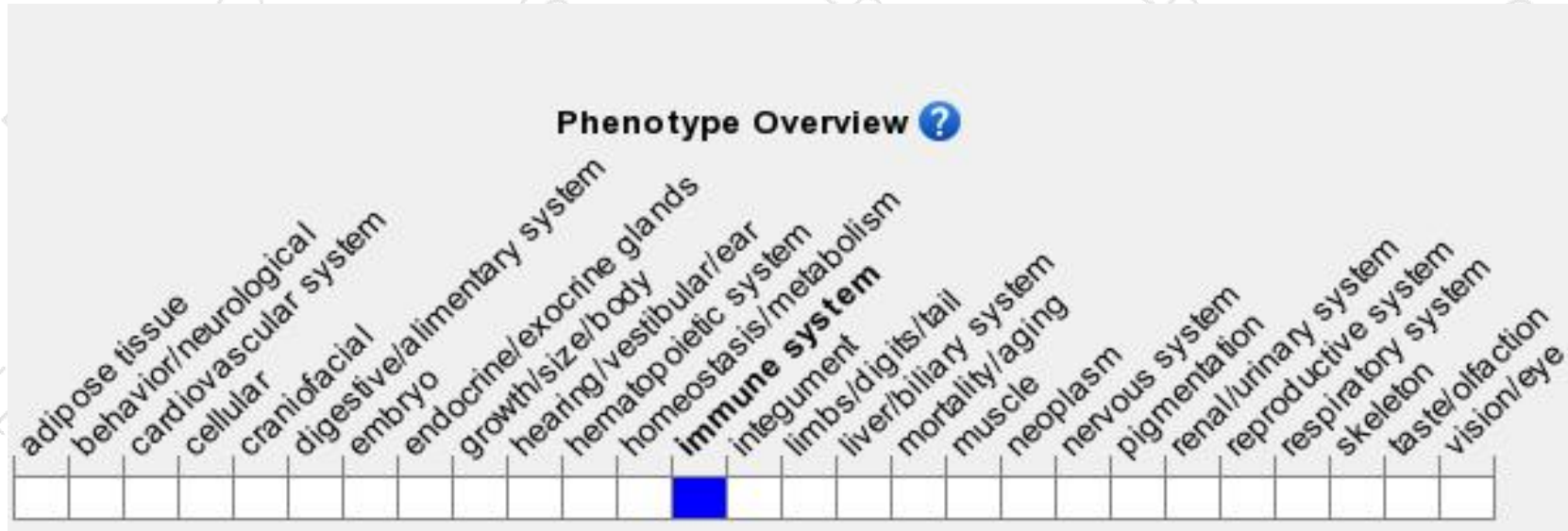
[Variant Legend](#)

- missense variant
- splice region variant
- synonymous variant

[Scale bar](#)

0 40 80 120 160 200 240 319

Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

According to the existing MGI data, Homozygous null mice are viable, fertile, and develop normally. Bone development and maintenance are normal, as are clinical-chemical parameters.

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

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