

***Coro2b* Cas9-KO Strategy**

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Project Overview

Project Name

Coro2b

Project type

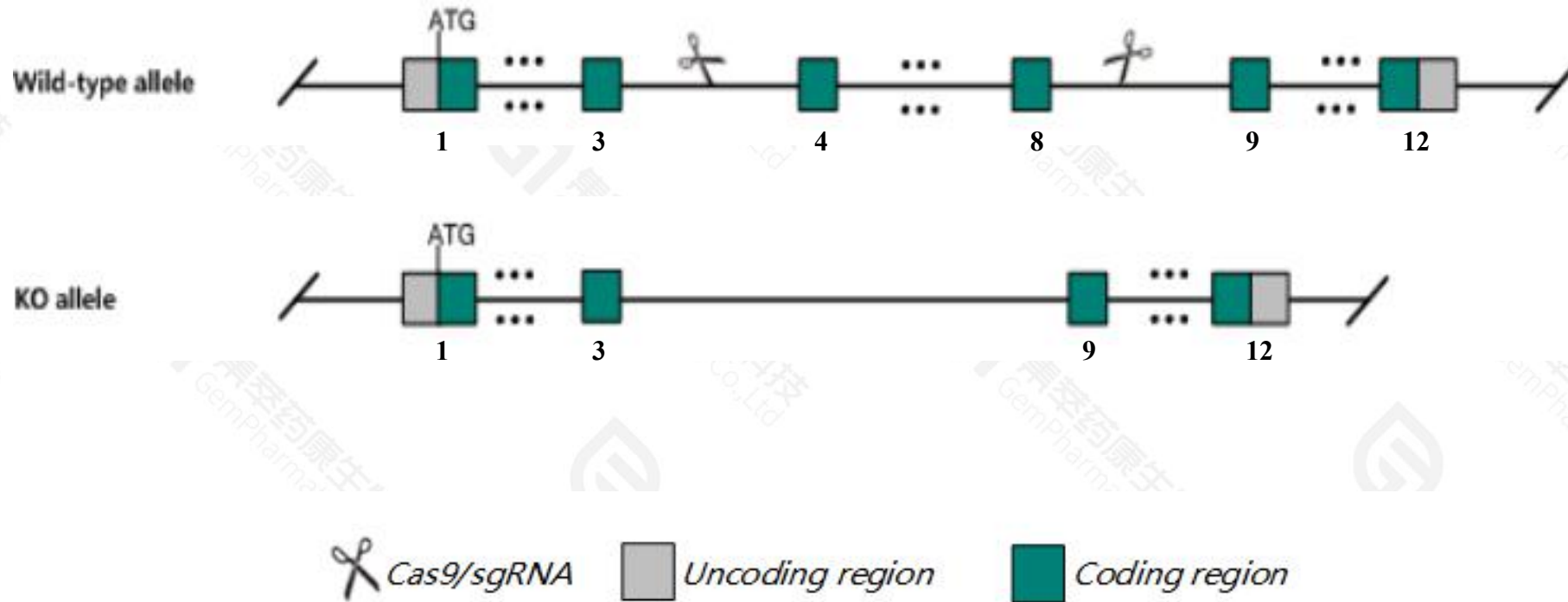
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Coro2b* gene. The schematic diagram is as follows:



- The *Coro2b* gene has 7 transcripts. According to the structure of *Coro2b* gene, exon4-exon8 of *Coro2b-201*(ENSMUST00000048043.12) transcript is recommended as the knockout region. The region contains 634bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Coro2b* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA 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.

- According to the existing MGI data, homozygous knockout reduces susceptibility to Doxorubicin-induced focal segmental glomerulosclerosis with lower levels of proteinuria and less renal glomerulus damage.
- The *Coro2b* gene is located on the Chr9. 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Coro2b coronin, actin binding protein, 2B [Mus musculus (house mouse)]

Gene ID: 235431, updated on 17-Dec-2020

Summary



Official Symbol	Coro2b provided by MGI
Official Full Name	coronin, actin binding protein, 2B provided by MGI
Primary source	MGI:MGI:2444283
See related	Ensembl:ENSMUSG00000041729
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	CLIPINC, E130012P22Rik
Expression	Broad expression in cerebellum adult (RPKM 45.9), cortex adult (RPKM 26.6) and 16 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

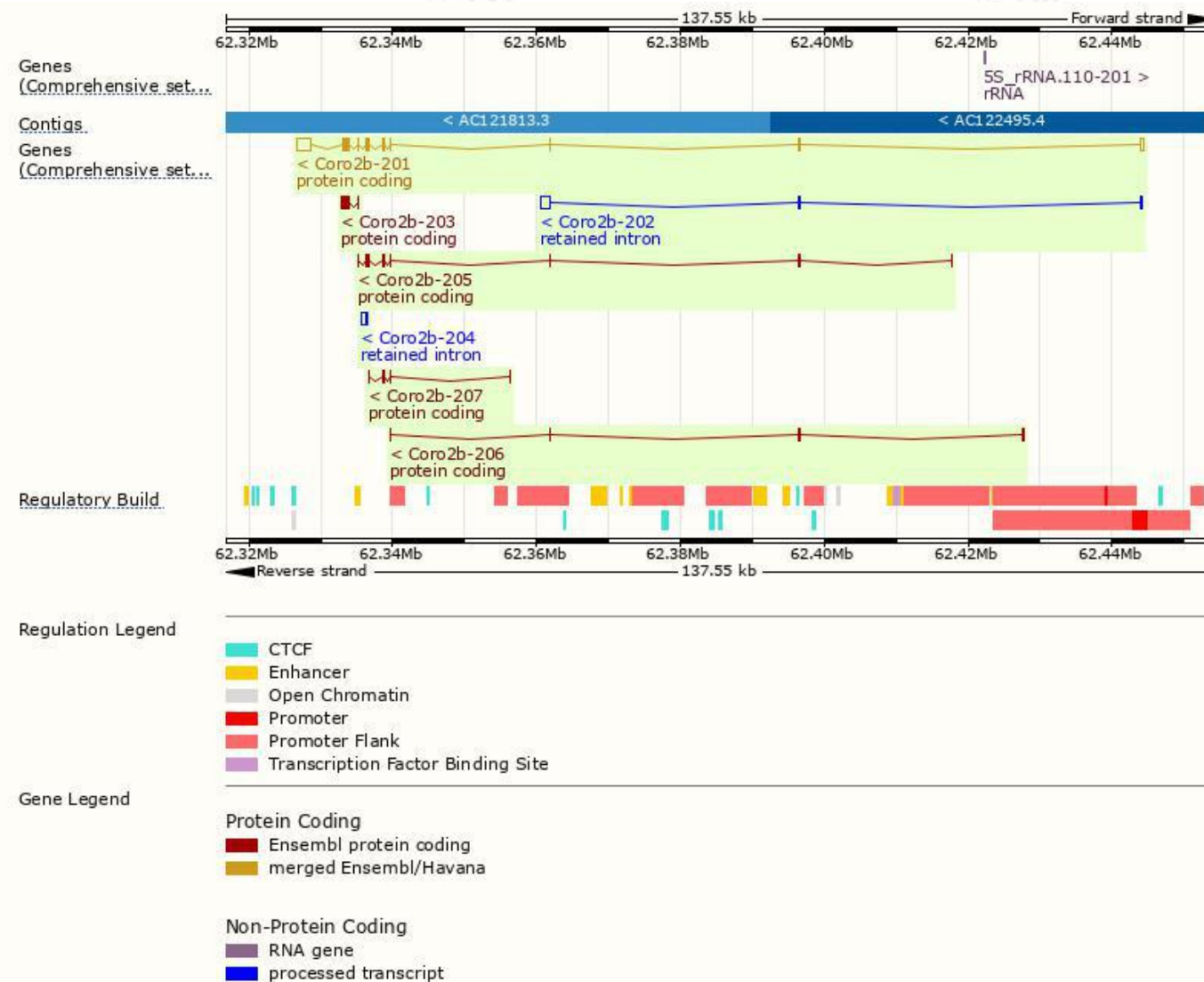
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Coro2b-201	ENSMUST00000048043.12	3610	480aa	Protein coding	CCDS23264		TSL:1 , GENCODE basic , APPRIS P1 ,
Coro2b-205	ENSMUST00000164246.9	987	317aa	Protein coding	-		CDS 3' incomplete , TSL:5 ,
Coro2b-203	ENSMUST00000131981.2	618	181aa	Protein coding	-		CDS 5' incomplete , TSL:3 ,
Coro2b-206	ENSMUST00000173171.3	396	121aa	Protein coding	-		CDS 3' incomplete , TSL:5 ,
Coro2b-207	ENSMUST00000174439.2	393	94aa	Protein coding	-		CDS 3' incomplete , TSL:5 ,
Coro2b-202	ENSMUST00000123379.2	1872	No protein	Retained intron	-		TSL:1 ,
Coro2b-204	ENSMUST00000151604.2	816	No protein	Retained intron	-		TSL:3 ,

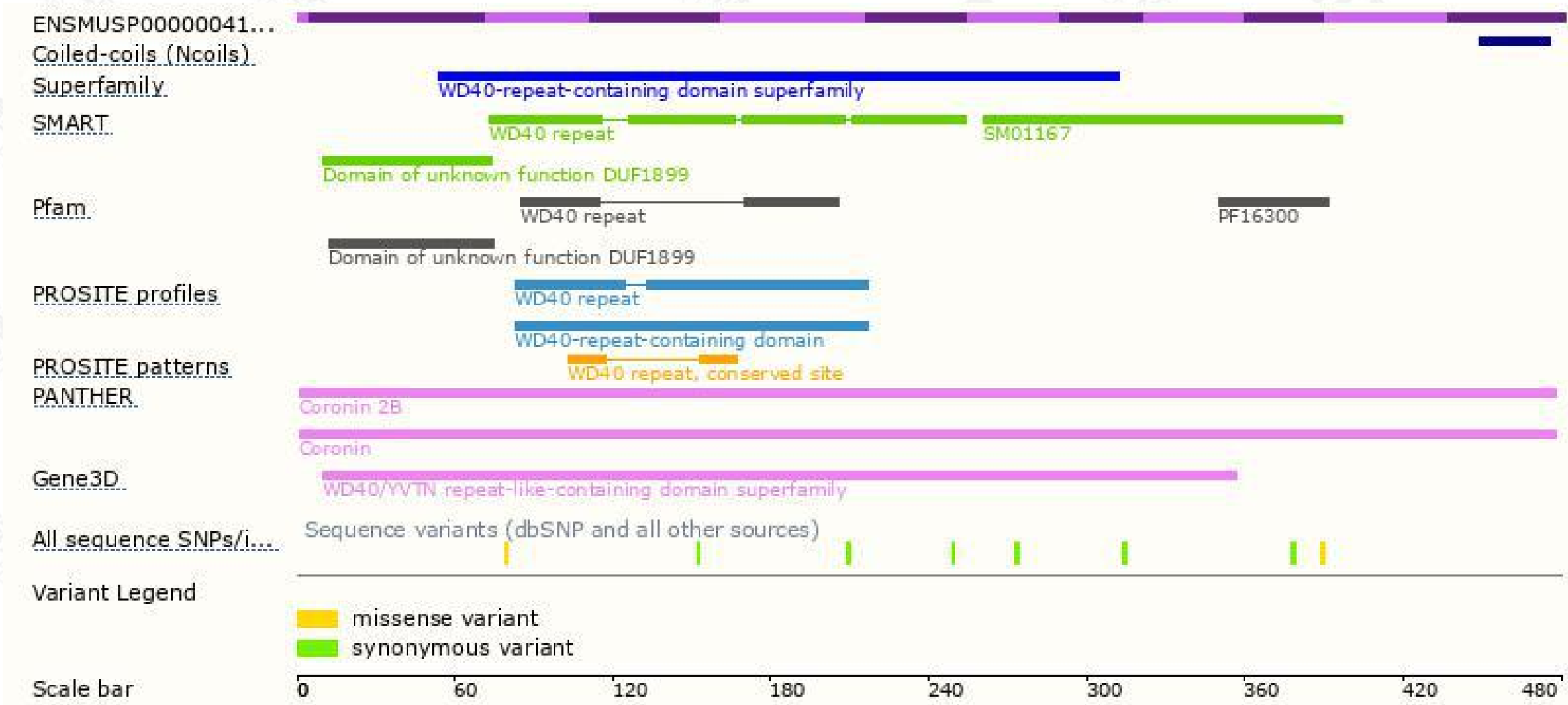
The strategy is based on the design of *Coro2b-201* transcript,the transcription is shown below:



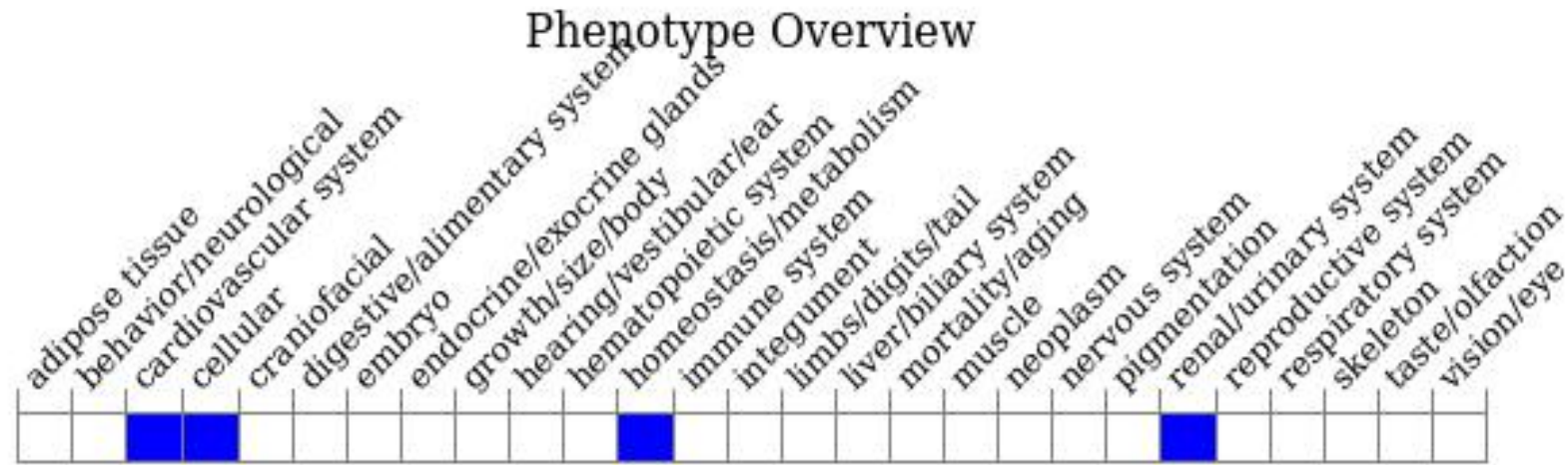
Genomic location distribution



Protein domain



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 knockout reduces susceptibility to Doxorubicin-induced focal segmental glomerulosclerosis with lower levels of proteinuria and less renal glomerulus damage.

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

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