

Cobll1 Cas9-CKO Strategy

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Project Overview

Project Name

Cobll1

Project type

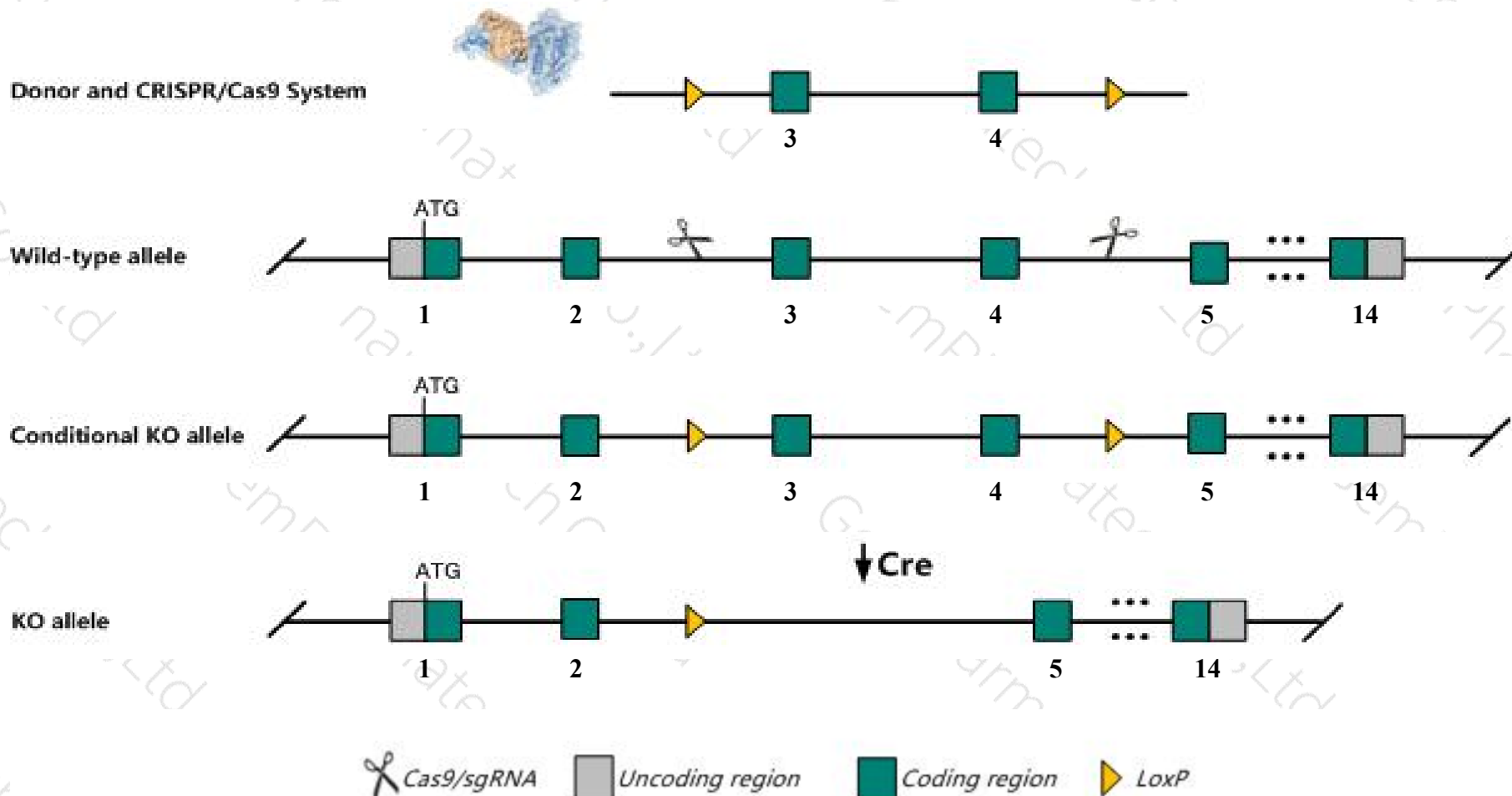
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cobll1* gene. The schematic diagram is as follows:



Technical routes

- The *Cobll1* gene has 13 transcripts. According to the structure of *Cobll1* gene, exon3-exon4 of *Cobll1*-202(ENSMUST00000102726.7) transcript is recommended as the knockout region. The region contains 431bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Cobll1* 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 *Cobll1* gene is located on the Chr2. 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.
- Transcript *Cobll1*-206&208&209&211 may not be affected.
- The effect on transcript *Cobll1*-210&213 is unknown.
- 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)

Cobll1 Cobl-like 1 [Mus musculus (house mouse)]

Gene ID: 319876, updated on 13-Mar-2020

Summary



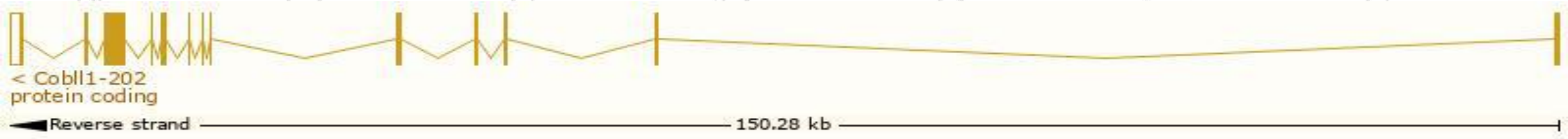
Official Symbol	Cobll1 provided by MGI
Official Full Name	Cobl-like 1 provided by MGI
Primary source	MGI:MGI:2442894
See related	Ensembl:ENSMUSG00000034903
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1810047P18Rik, Coblr1, D430044D16Rik
Expression	Broad expression in adrenal adult (RPKM 24.9), kidney adult (RPKM 14.3) and 20 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

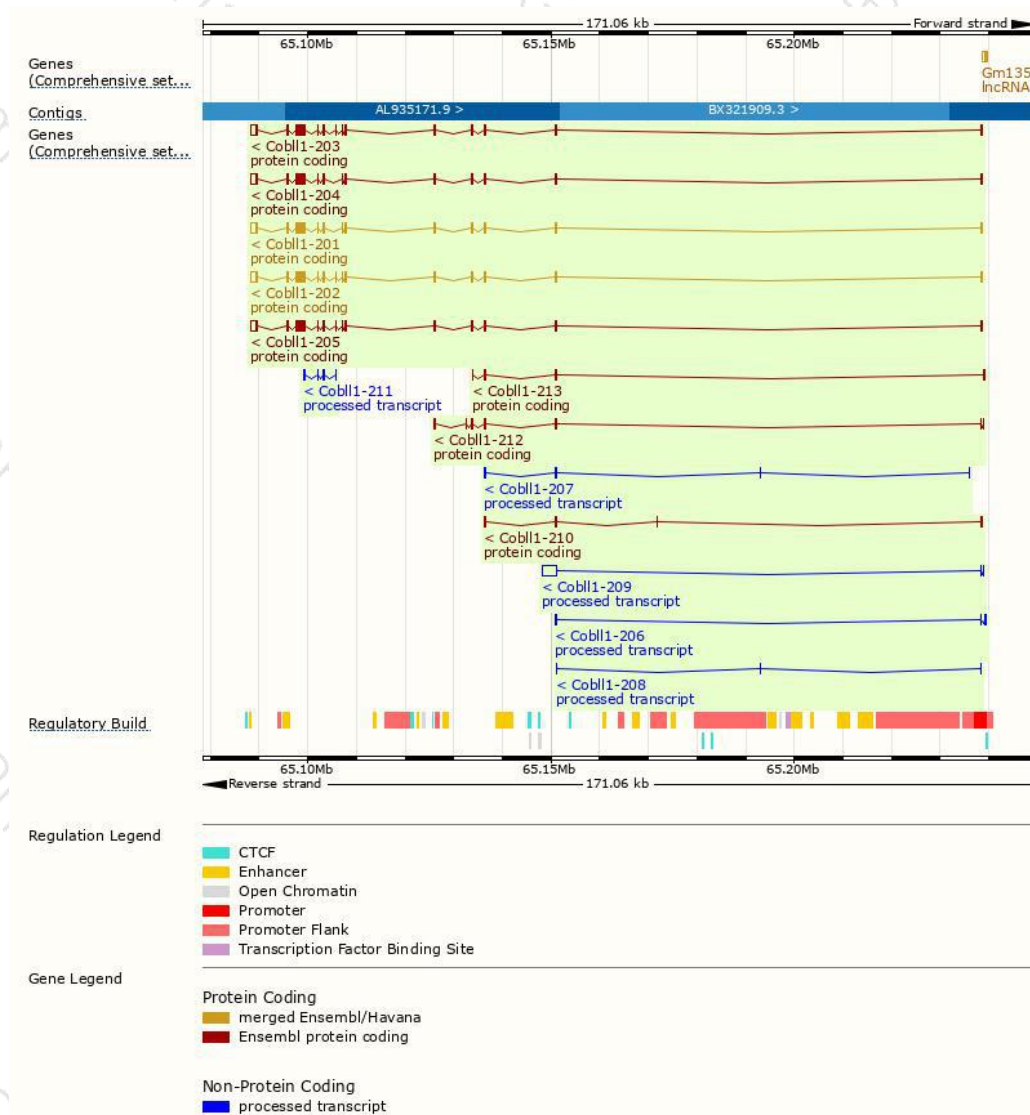
The gene has 13 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cobll1-202	ENSMUST00000102726.7	5031	1240aa	Protein coding	CCDS16072	B1AZ15	TSL:1 GENCODE basic APPRIS P3
Cobll1-201	ENSMUST00000090896.9	4867	1203aa	Protein coding	CCDS50595	Q3UMF0	TSL:1 GENCODE basic APPRIS ALT2
Cobll1-203	ENSMUST00000112429.8	5045	1241aa	Protein coding	-	B1AZ14	TSL:5 GENCODE basic APPRIS ALT2
Cobll1-205	ENSMUST00000112431.7	5024	1241aa	Protein coding	-	B1AZ14	TSL:1 GENCODE basic APPRIS ALT2
Cobll1-204	ENSMUST00000112430.7	4917	1202aa	Protein coding	-	Q3UMF0	TSL:1 GENCODE basic APPRIS ALT2
Cobll1-212	ENSMUST00000155916.7	1092	346aa	Protein coding	-	B1AZ26	CDS 3' incomplete TSL:5
Cobll1-210	ENSMUST00000155082.1	660	175aa	Protein coding	-	B1AZ20	CDS 3' incomplete TSL:3
Cobll1-213	ENSMUST00000156643.1	531	142aa	Protein coding	-	B1AZ25	CDS 3' incomplete TSL:5
Cobll1-209	ENSMUST00000136537.7	3051	No protein	Processed transcript	-	-	TSL:1
Cobll1-211	ENSMUST00000155768.1	713	No protein	Processed transcript	-	-	TSL:2
Cobll1-207	ENSMUST00000132478.7	546	No protein	Processed transcript	-	-	TSL:3
Cobll1-206	ENSMUST00000124769.1	517	No protein	Processed transcript	-	-	TSL:1
Cobll1-208	ENSMUST00000132979.1	338	No protein	Processed transcript	-	-	TSL:5

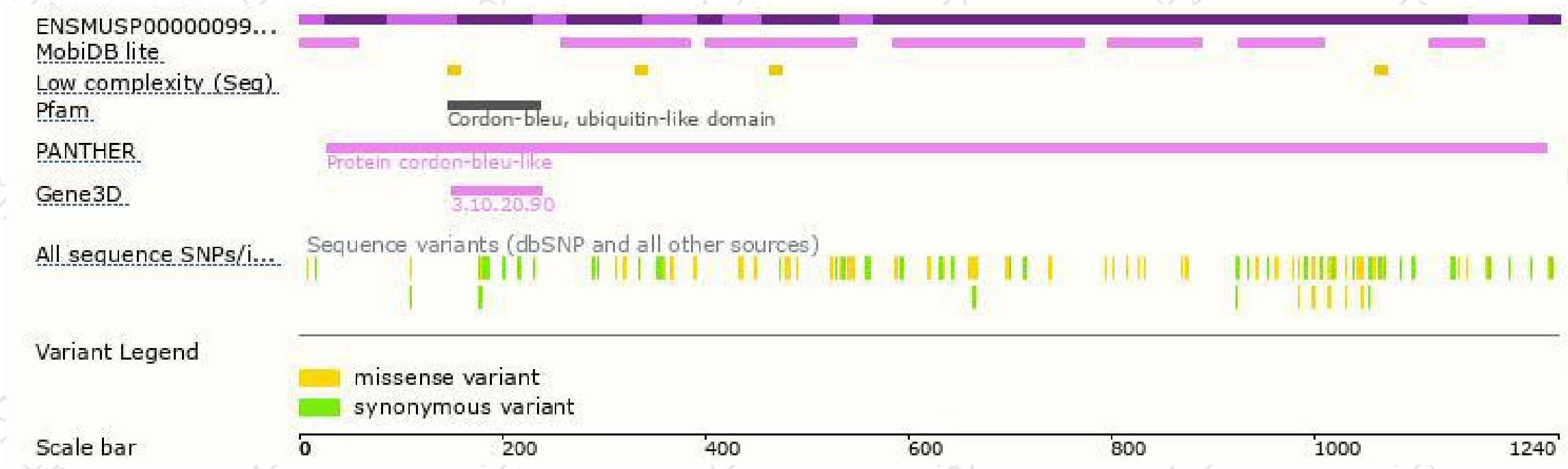
The strategy is based on the design of *Cobll1-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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