Rubcnl Cas9-KO Strategy

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Project Overview

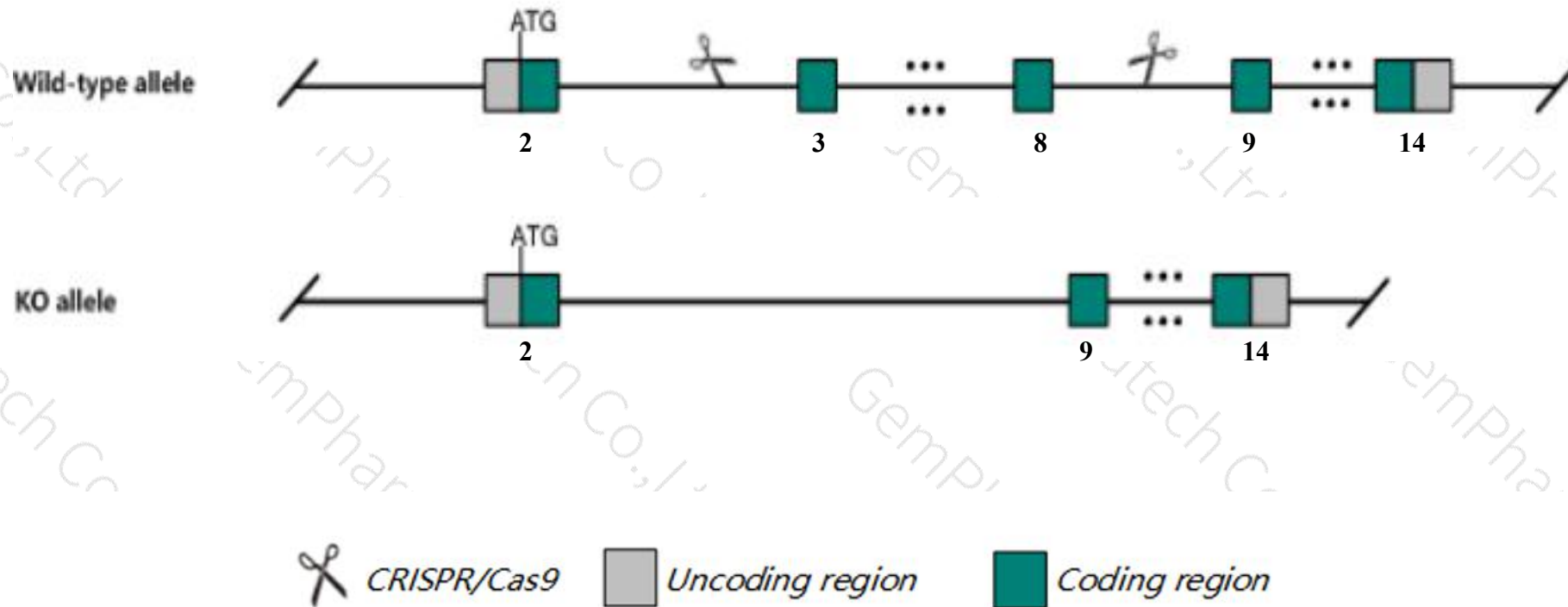|	
Project Name	*Rubcnl*
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

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

Technical routes

➢ The *Rubcnl* gene has 2 transcripts. According to the structure of *Rubcnl* gene, exon3-exon8 of *Rubcnl-201*(ENSMUST00000036072.7) transcript is recommended as the knockout region.The region contains 727bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Rubcnl* gene. The brief process is as follows: CRISPR/Cas9 system 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.

Notice

➢ The *Rubcnl* 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 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）

Rubcnl   RUN and cysteine rich domain containing beclin 1 interacting protein like [_Mus musculus_ (house mouse)]

Gene ID: 271221, updated on 25-Sep-2020

▲ Summary   ⌃ ?

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Official Symbol	Rubcnl provided by MGI
Official Full Name	RUN and cysteine rich domain containing beclin 1 interacting protein like provided by MGI
Primary source	MGI:MGI:2685590
See related	Ensembl:ENSMUSG00000034959
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	Gm744; Gm911; Kiaa0226l; 5031414D18Rik
Expression	Biased expression in spleen adult (RPKM 8.9), mammary gland adult (RPKM 2.4) and 6 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rubcnl-201	ENSMUST00000036072.7	2651	675aa	Protein coding	CCDS36977	F8WGX2	TSL:1 GENCODE basic APPRIS P1
Rubcnl-202	ENSMUST00000228689.1	3758	No protein	Retained intron	-	-	

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

Rubcnl-201 >
protein coding
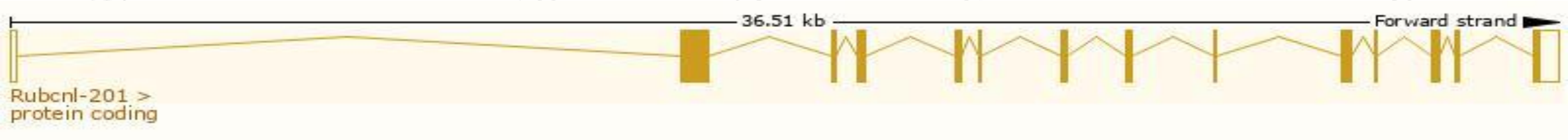
Genomic location distribution
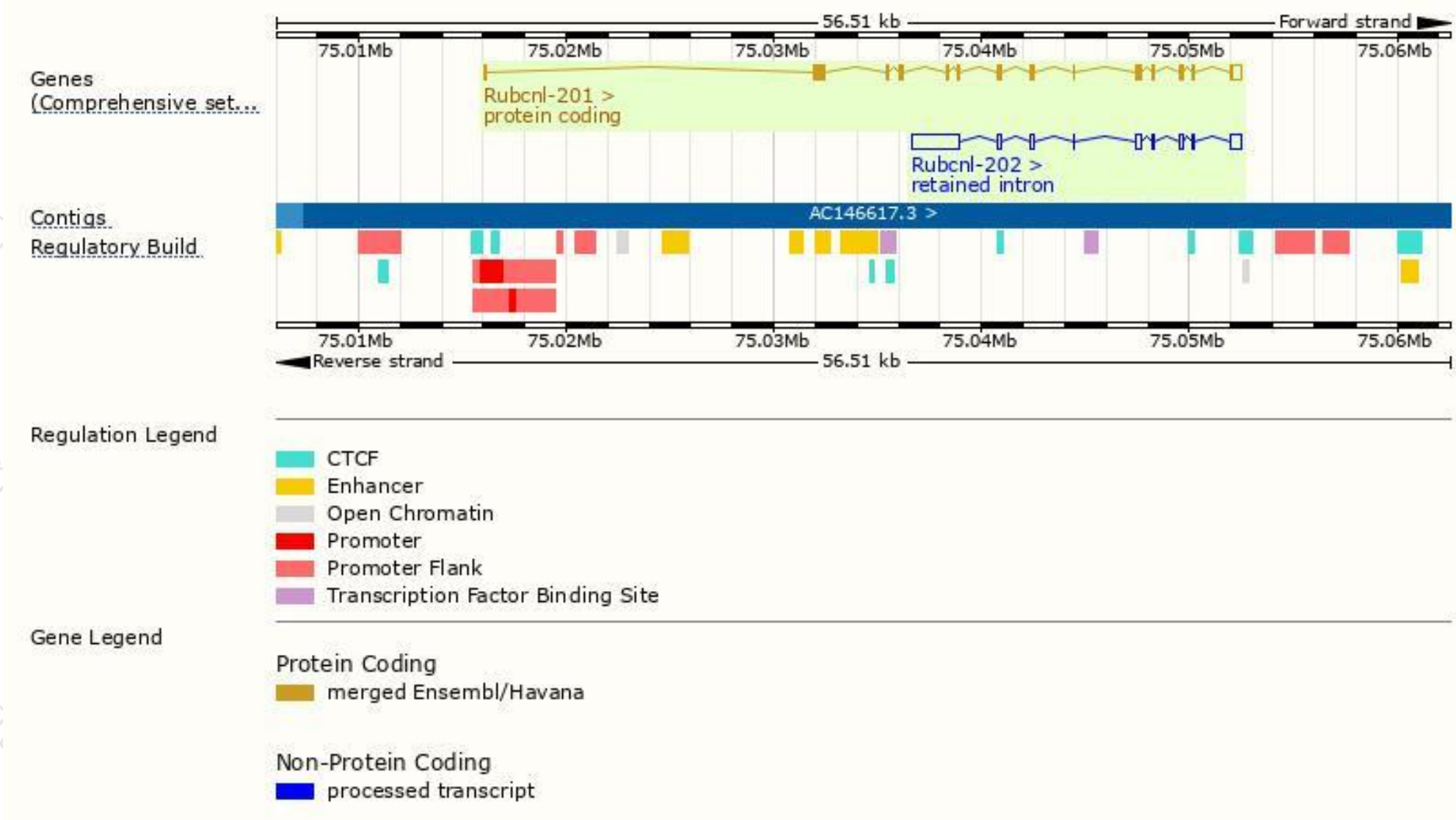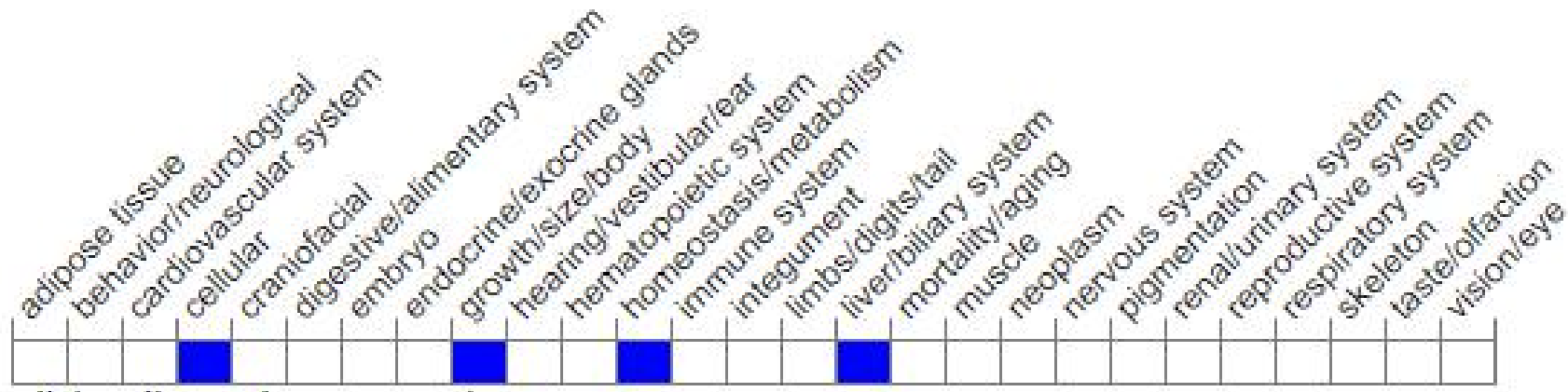
Protein domain

Mouse phenotype description(MGI)

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

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