Junb Cas9-CKO Strategy

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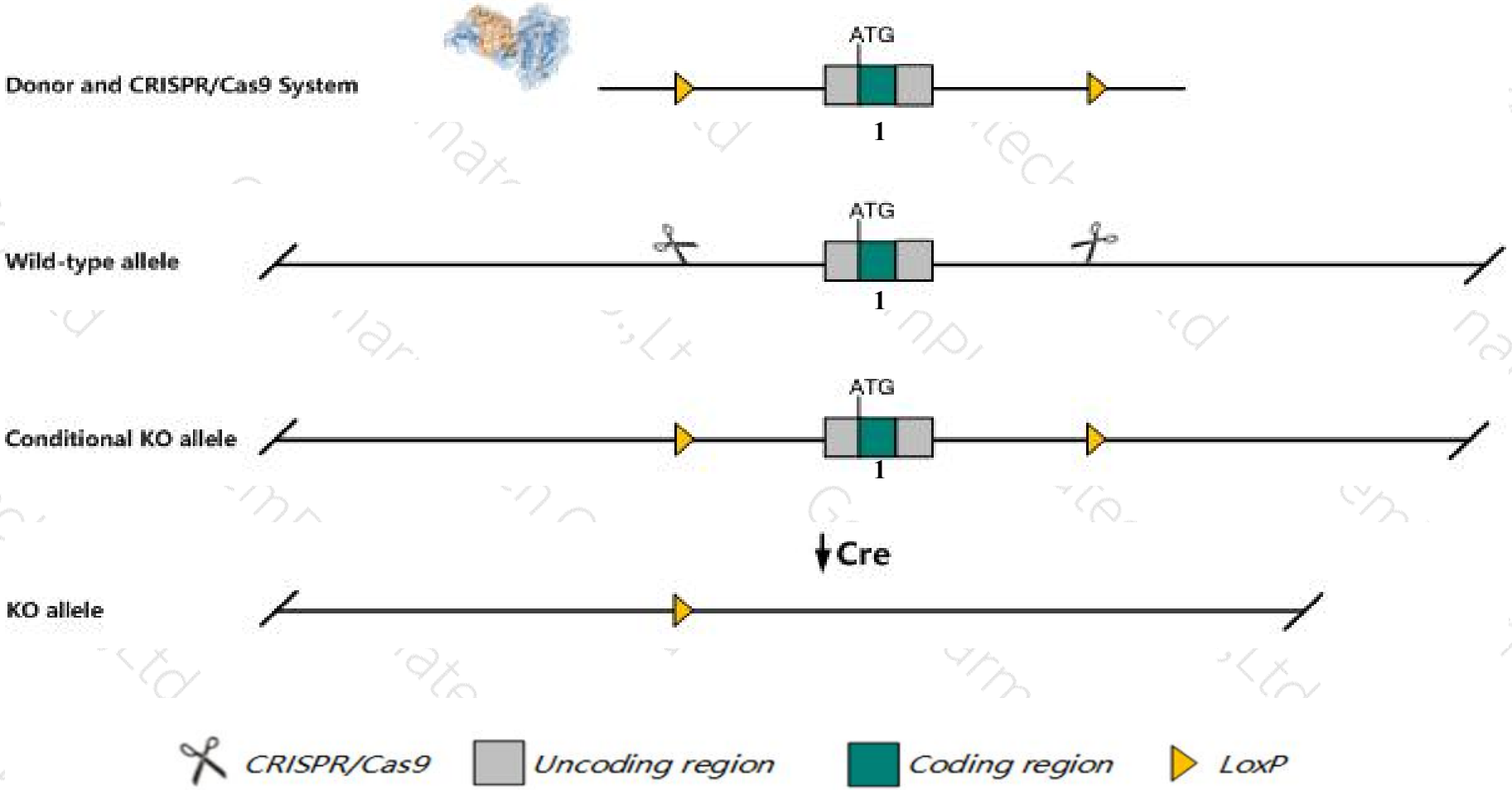
Project Overview

Project Name	***Junb***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

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



Technical routes

- The *Junb* gene has 2 transcripts. According to the structure of *Junb* gene, exon1 of *Junb-201* (ENSMUST00000064922.6) transcript is recommended as the knockout region.The region contains all of the coding sequence.Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Junb* 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.

Notice

➢ According to the existing MGI data,Homozygous null mutants die between embryonic day 8.5-10 due to impaired placental development. Embryos are severely growth retarded, but cell proliferation is normal, reflecting a failure to establish vascular interactions with the maternal circulation.

➢ The *Junb* gene is located on the Chr8. 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）

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Junb jun B proto-oncogene [*Mus musculus* (house mouse)]

Gene ID: 16477, updated on 19-Nov-2019

Summary

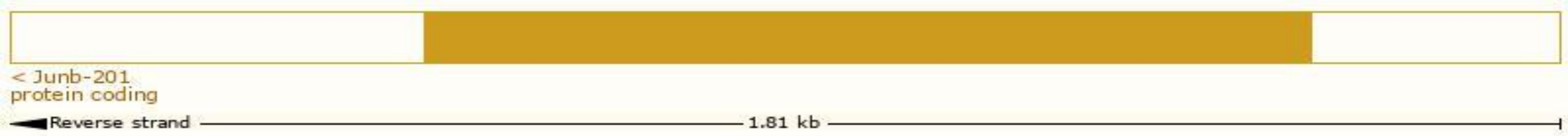
Official Symbol	Junb provided by MGI
Official Full Name	jun B proto-oncogene provided by MGI
Primary source	MGI:MGI:96647
See related	Ensembl:ENSMUSG00000052837
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Orthologs	human all

Transcript information（Ensembl）

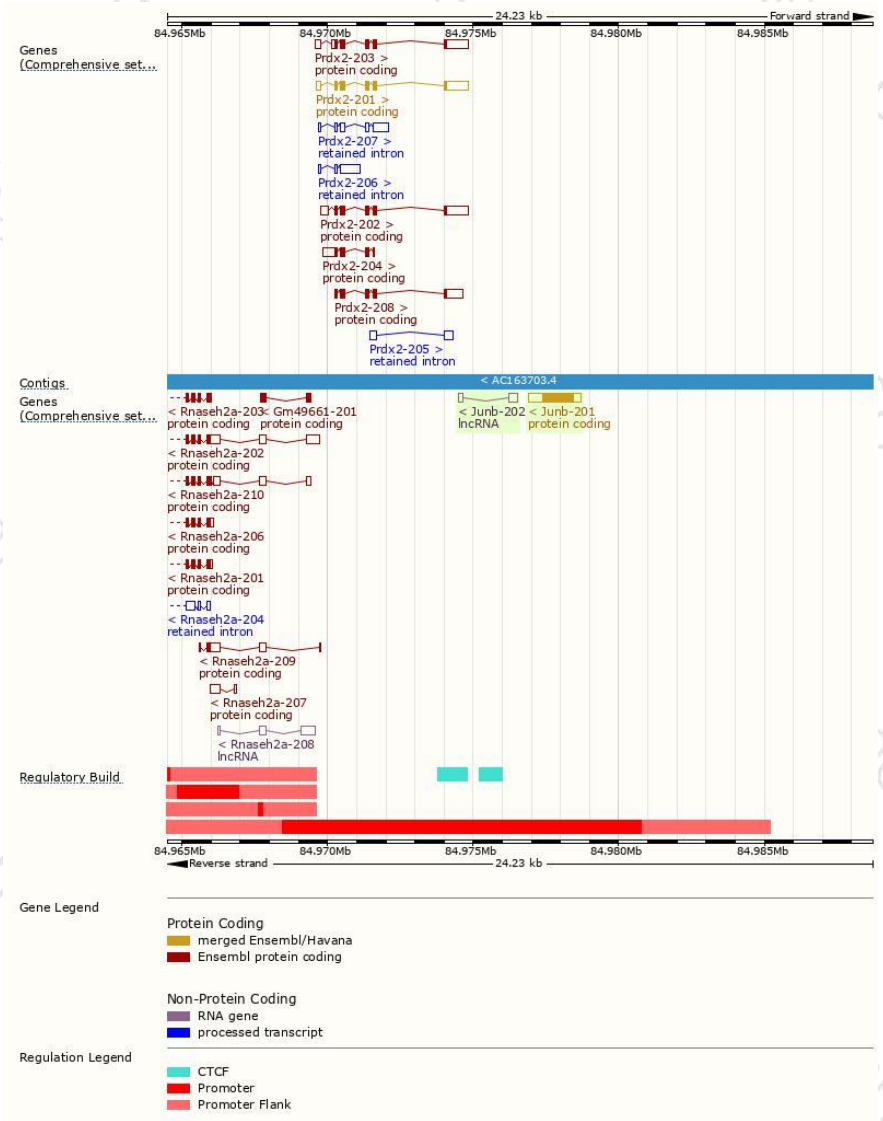
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Junb-201	ENSMUST00000064922.6	1809	344aa	Protein coding	CCDS22488	P09450 Q569U6	TSL:NA GENCODE basic APPRIS P1
Junb-202	ENSMUST00000209372.1	492	No protein	lncRNA	-	-	TSL:1

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

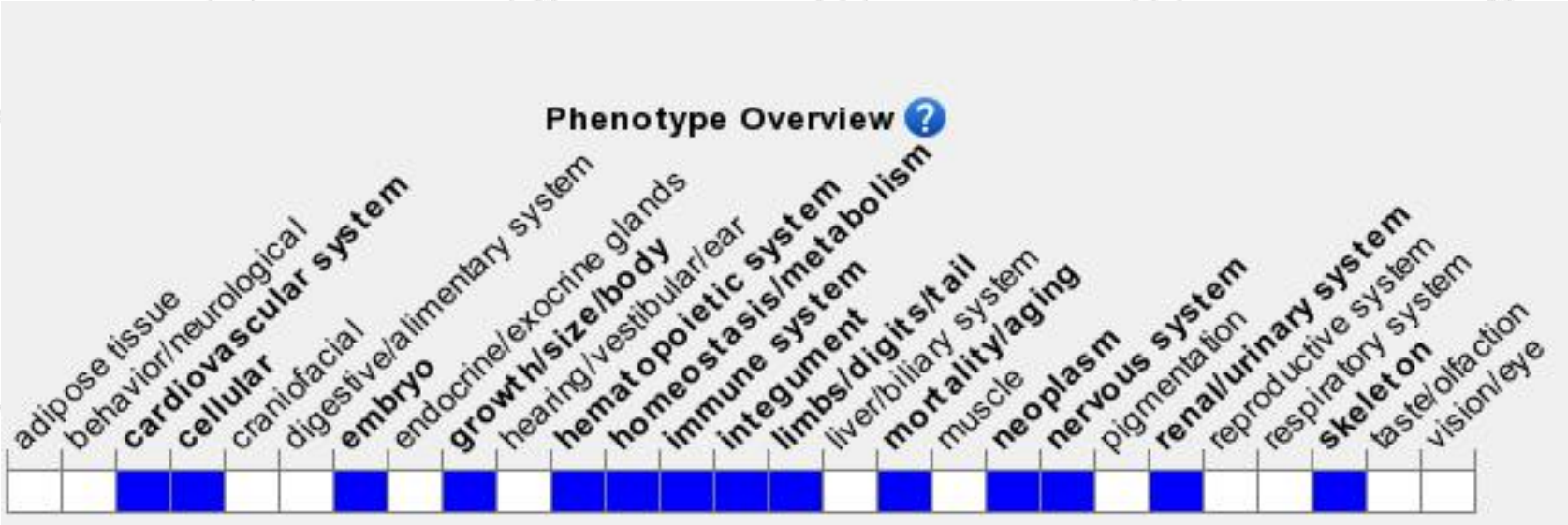


Genomic location distribution



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/).

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

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