Ccnc Cas9-KO Strategy

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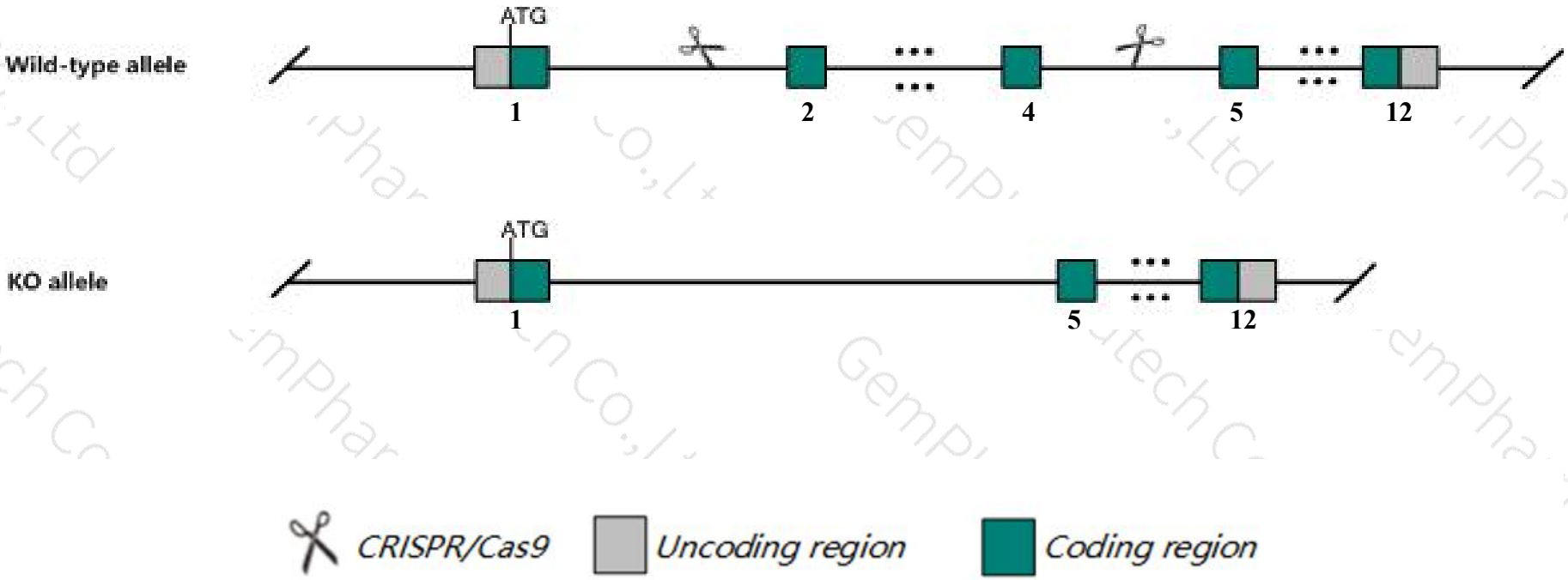
Project Overview

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

Knockout strategy

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



Technical routes

➢ The *Ccnc* gene has 8 transcripts. According to the structure of *Ccnc* gene, exon2-exon4 of *Ccnc-201* (ENSMUST00000065928.10) transcript is recommended as the knockout region.The region contains 262bp coding sequence. Knock out the region will result in disruption of protein function.

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

Notice

- According to the existing MGI data,Homozygous null mice die prenatally and exhibit growth retardation and placental defects.

- The *Ccnc* gene is located on the Chr4. 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）

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Ccnc cyclin C [Mus musculus (house mouse)]

Gene ID: 51813, updated on 31-Jan-2019

Summary

Official Symbol	Ccnc provided by MGI
Official Full Name	cyclin C provided by MGI
Primary source	MGI:MGI:1858199
See related	Ensembl:ENSMUSG00000028252
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	AI451004, AU020987, CG1C
Expression	Ubiquitous expression in CNS E18 (RPKM 5.3), CNS E14 (RPKM 4.7) and 28 other tissues See more
Orthologs	human all

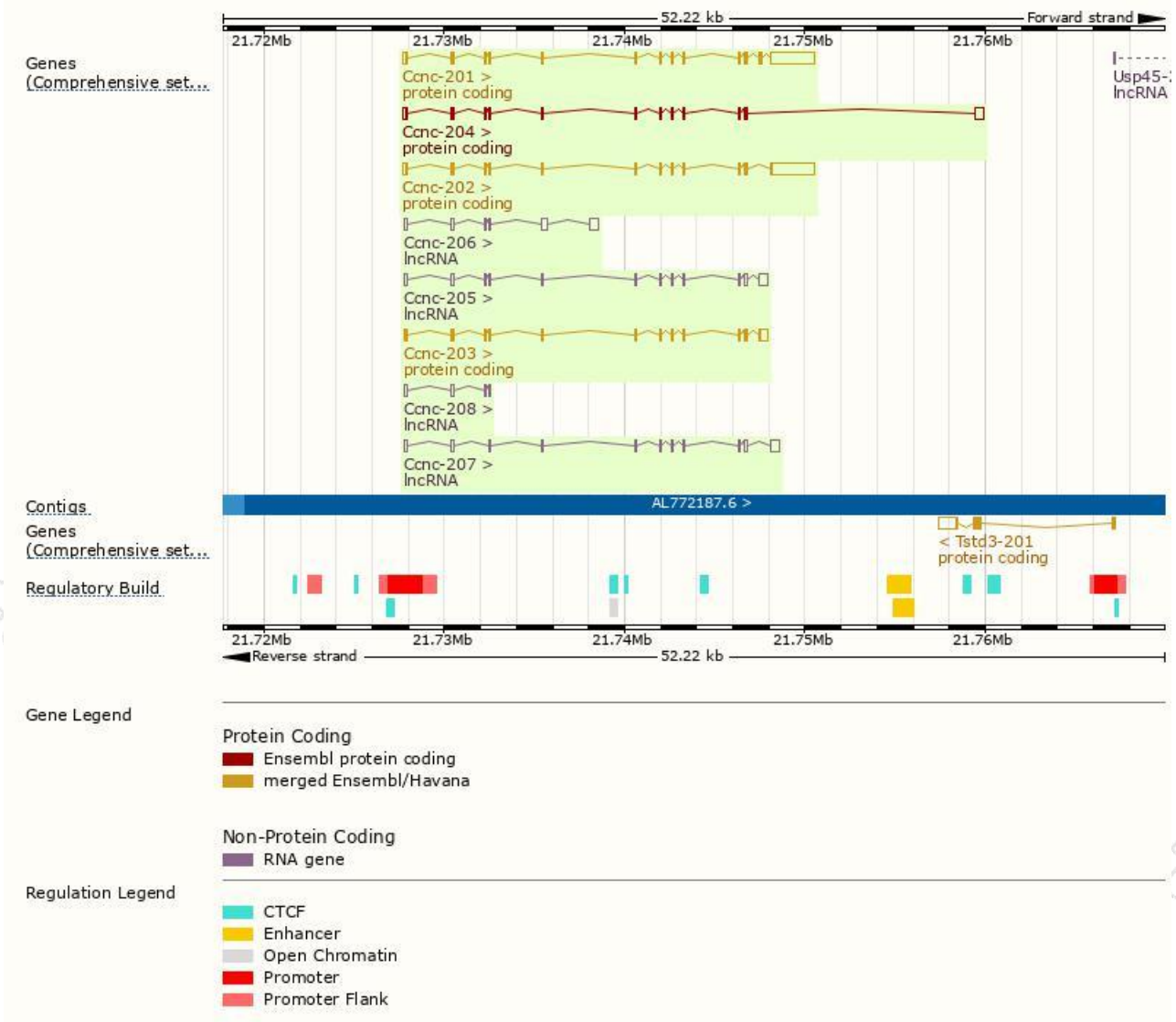
Transcript information（Ensembl）

The gene has 8 transcripts,all transcripts are shown below:

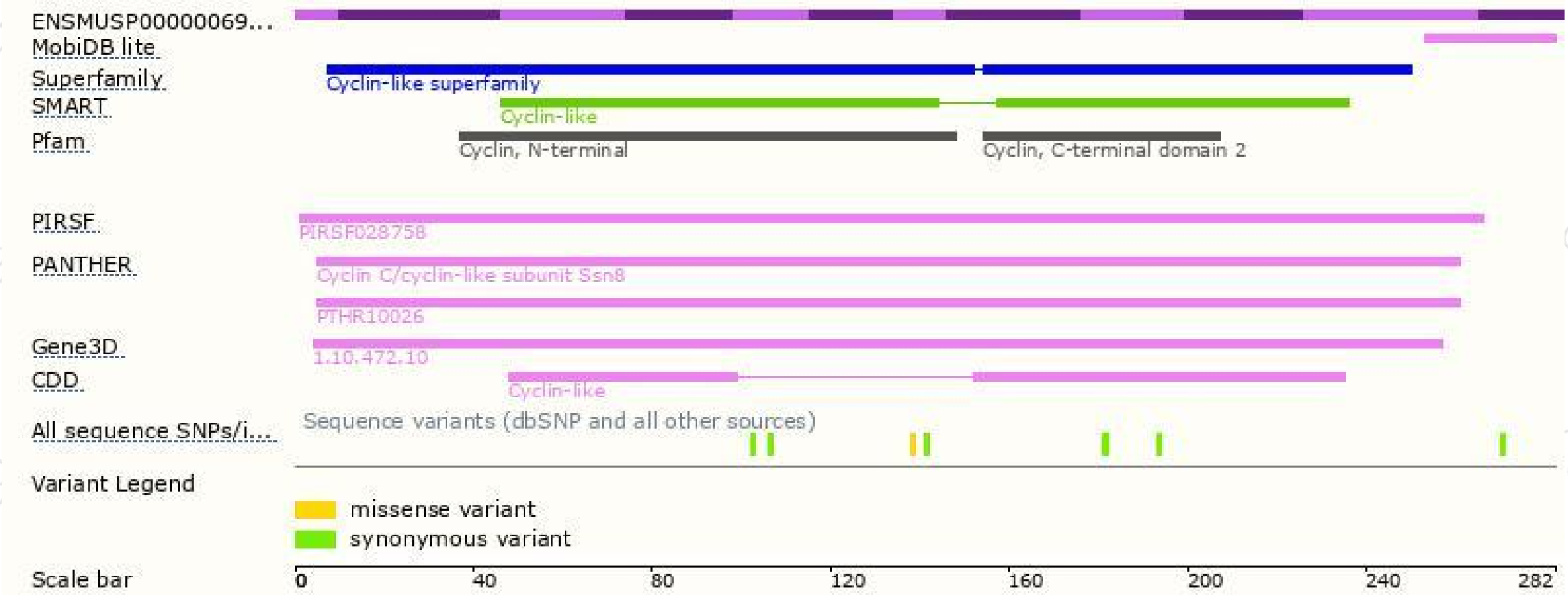
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ccnc-201	ENSMUST00000065928.10	3484	282aa	Protein coding	CCDS51127	Q8CAS3	TSL:1 GENCODE basic APPRIS ALT1
Ccnc-202	ENSMUST00000102997.7	3365	283aa	Protein coding	CCDS17998	Q62447	TSL:1 GENCODE basic APPRIS P3
Ccnc-204	ENSMUST00000120679.7	1453	266aa	Protein coding	CCDS71350	Q3UXL9	TSL:1 GENCODE basic
Ccnc-203	ENSMUST00000108240.2	1406	282aa	Protein coding	CCDS51127	Q8CAS3	TSL:1 GENCODE basic APPRIS ALT1
Ccnc-205	ENSMUST00000123294.7	1404	No protein	lncRNA	-	-	TSL:1
Ccnc-207	ENSMUST00000133712.1	1247	No protein	lncRNA	-	-	TSL:1
Ccnc-206	ENSMUST00000133597.7	1211	No protein	lncRNA	-	-	TSL:1
Ccnc-208	ENSMUST00000145288.7	445	No protein	lncRNA	-	-	TSL:1

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

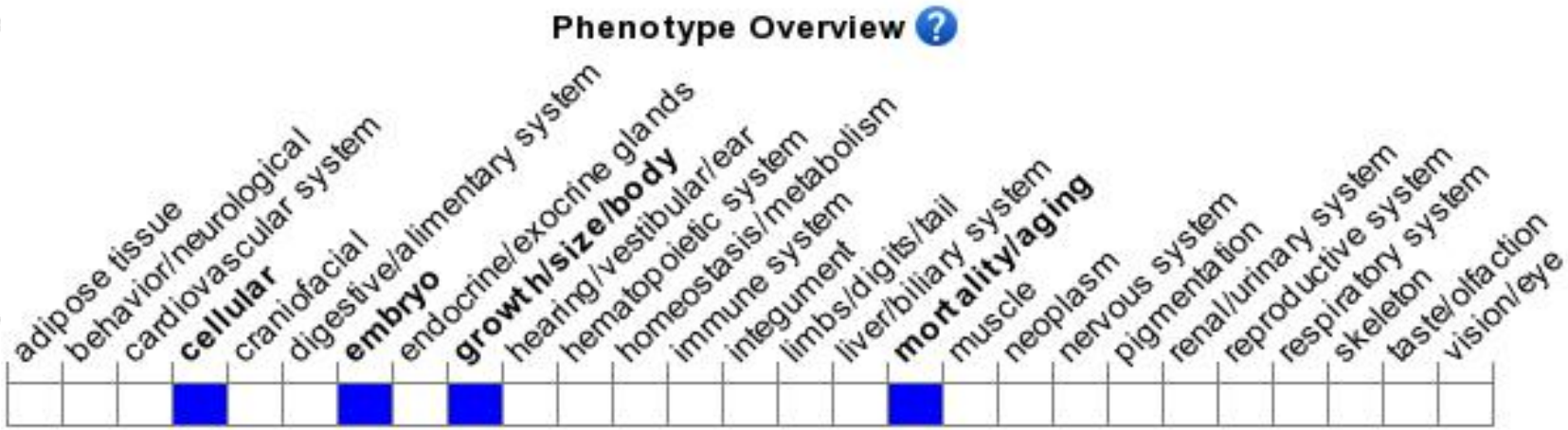
Genomic location distribution



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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