Ccnb3 Cas9-KO Strategy

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Project Overview

Project Name	*Ccnb3*
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ccnb3* gene. The schematic diagram is as follows:

Technical routes

➢ The *Ccnb3* gene has 2 transcripts. According to the structure of *Ccnb3* gene, exon4-exon5 of *Ccnb3-202* (ENSMUST00000115752.7) transcript is recommended as the knockout region.The region contains Ens 203bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Ccnb3* 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.

Notice

➢ The *Ccnb3* gene is located on the ChrX. 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）

Ccnb3 cyclin B3 [Mus musculus (house mouse)]

Gene ID: 209091, updated on 31-Jan-2019

▲ Summary

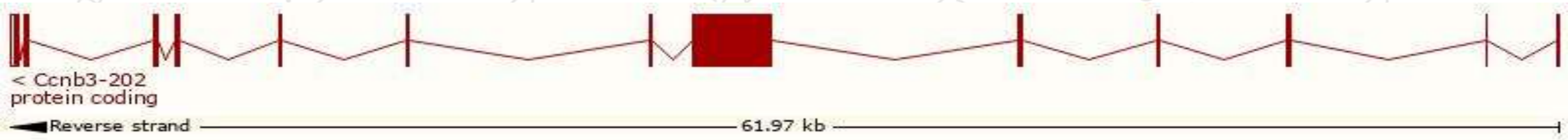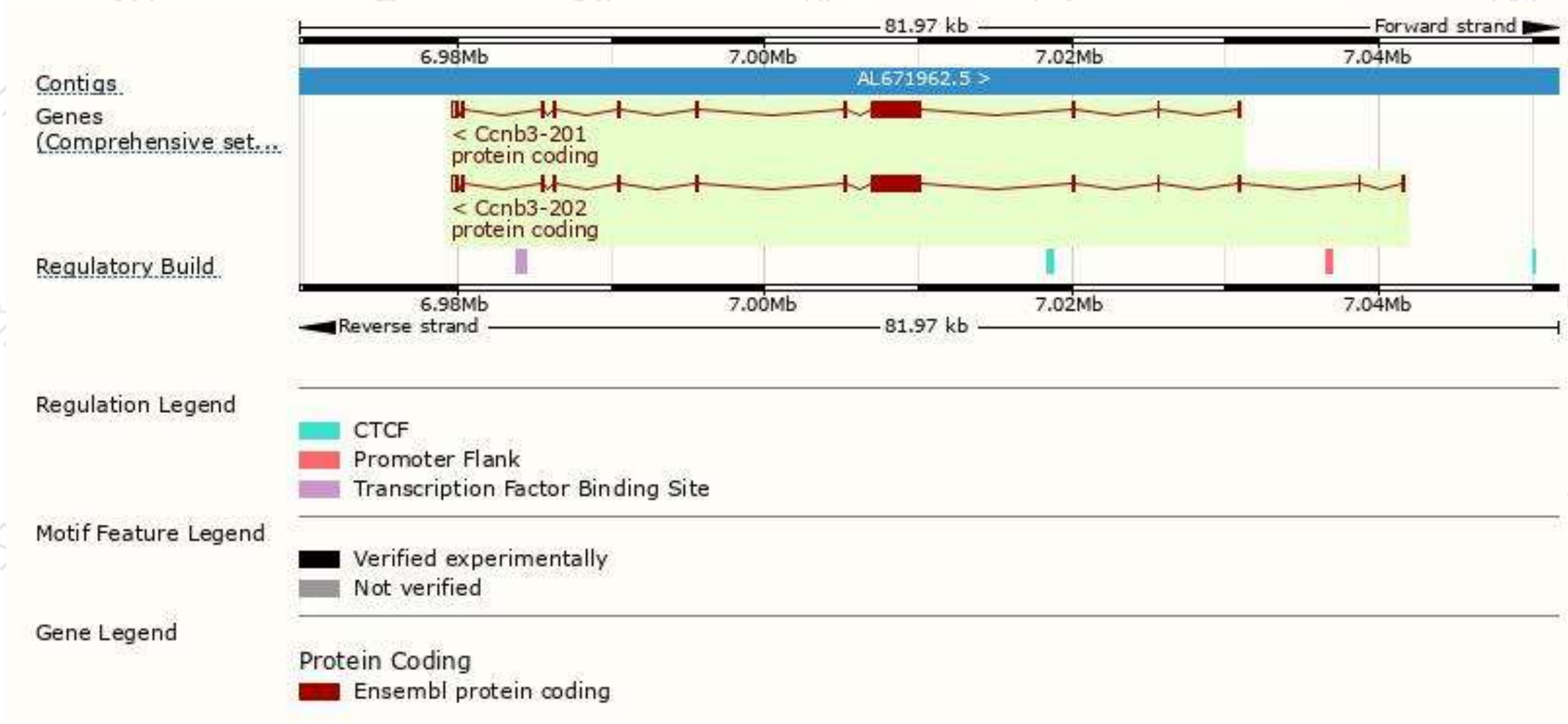|	
Official Symbol	Ccnb3 provided by MGI
Official Full Name	cyclin B3 provided by MGI
Primary source	MGI:MGI:2183443
See related	Ensembl:ENSMUSG00000051592
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Expression	Low expression observed in reference datasetSee 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
Ccnb3-202	ENSMUST00000115752.7	4554	1396aa	Protein coding	CCDS29961	A2AEP2	TSL:1 GENCODE basic APPRIS P1
Ccnb3-201	ENSMUST00000056725.7	4475	1396aa	Protein coding	CCDS29961	A2AEP2	TSL:5 GENCODE basic APPRIS P1

The strategy is based on the design of *Ccnb3-202* transcript,The transcription is shown below
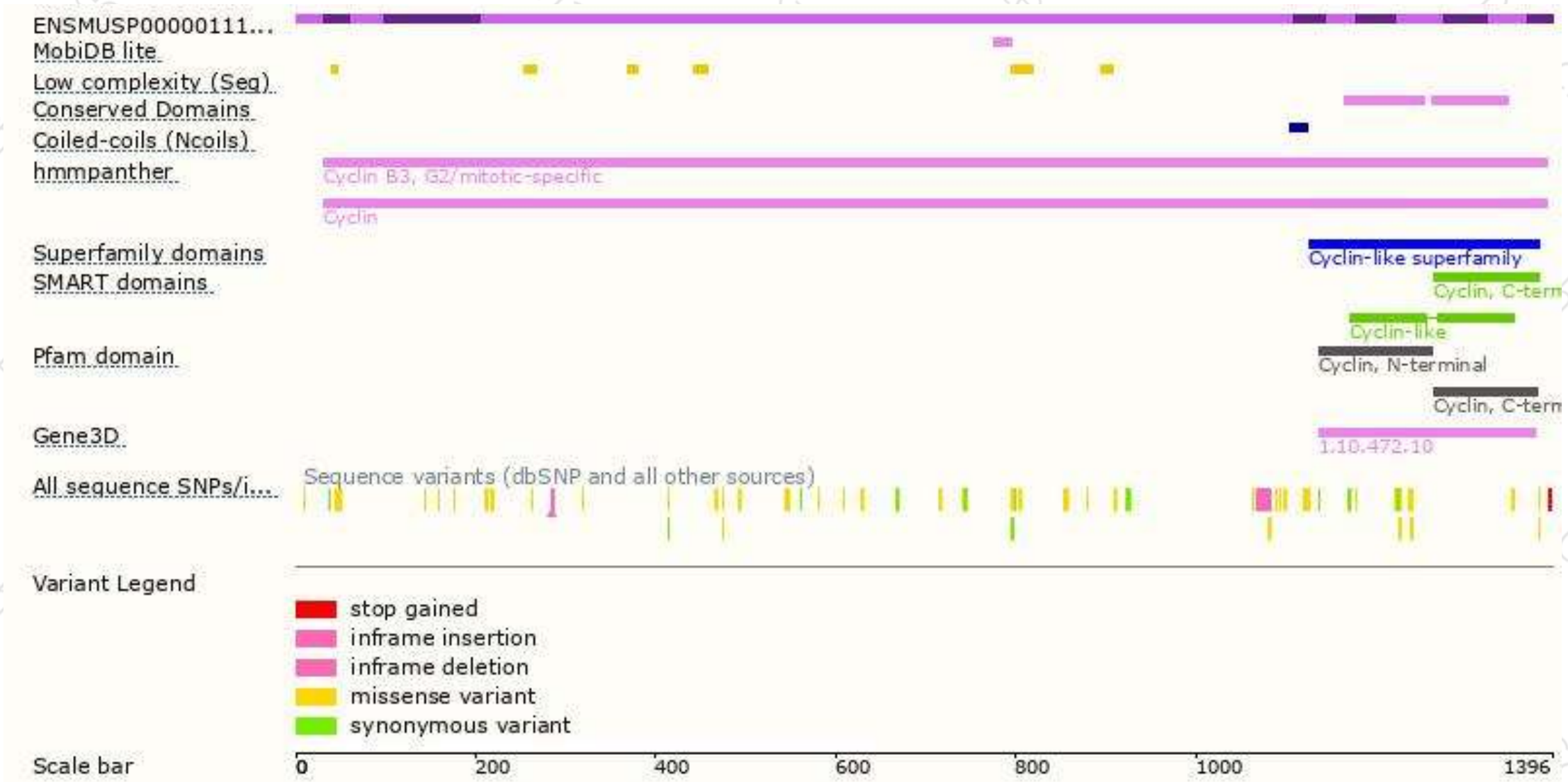

< Ccnb3-202
protein coding

Reverse strand

61.97 kb

Genomic location distribution

Protein domain

ENSMUSP00000111...
MobiDB lite
Low complexity (Seg)
Conserved Domains
Coiled-coils (Ncoils)
hmmpanther — Cyclin B3, G2/mitotic-specific
Cyclin
Superfamily domains — Cyclin-like superfamily
SMART domains — Cyclin, C-term
Cyclin-like
Pfam domain — Cyclin, N-terminal
Cyclin, C-term
Gene3D — 1.10.472.10
All sequence SNPs/i... — Sequence variants (dbSNP and all other sources)

Variant Legend
- stop gained
- inframe insertion
- inframe deletion
- missense variant
- synonymous variant

Scale bar
0   200   400   600   800   1000   1396

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