

Chic1 Cas9-KO Strategy

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Project Overview

Project Name

Chic1

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Chic1* gene. The schematic diagram is as follows:



- The *Chic1* gene has 1 transcript. According to the structure of *Chic1* gene, exon2-exon3 of *Chic1-201* (ENSMUST00000116547.2) transcript is recommended as the knockout region. The region contains 211bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Chic1* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Male chimeras hemizygous for a gene trapped allele appear normal at E9.5.
- The N-terminal of *Chic1* gene will remain several amino acids ,it may remain the partial function of *Chic1* gene.
- The *Chic1* 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)

Chic1 cysteine-rich hydrophobic domain 1 [*Mus musculus* (house mouse)]

Gene ID: 12212, updated on 12-Aug-2019

Summary

- Official Symbol** Chic1 provided by [MGI](#)
- Official Full Name** cysteine-rich hydrophobic domain 1 provided by [MGI](#)
- Primary source** [MGI:MGI:1344694](#)
- See related** [Ensembl:ENSMUSG000000031327](#)
- 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** Brx; Gm10454
- Expression** Broad expression in frontal lobe adult (RPKM 3.3), cerebellum adult (RPKM 3.2) and 17 other tissues [See more](#)
- Orthologs** [human](#) [all](#)

Genomic context

Location: X D; X 46.08 cM See Chic1 in [Genome Data Viewer](#)

Exon count: 7

Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	X	NC_000086.7 (103356403..103409092)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	X	NC_000086.6 (100551815..100591457)

Transcript information (Ensembl)

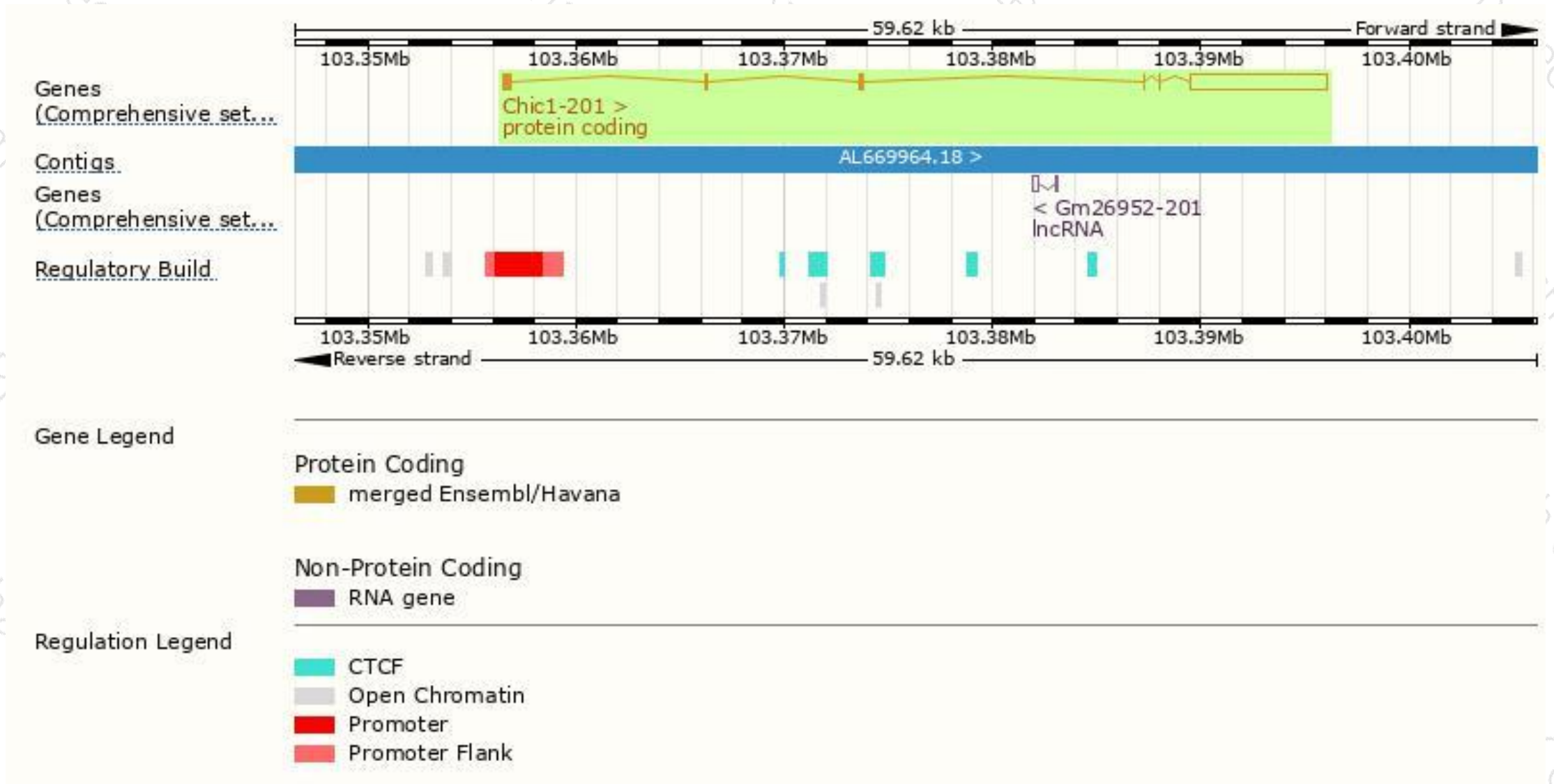
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Chic1-201	ENSMUST00000116547.2	7375	227aa	Protein coding	CCDS53165	A2RT09 Q8CBW7	TSL:1 GENCODE basic APPRIS P1

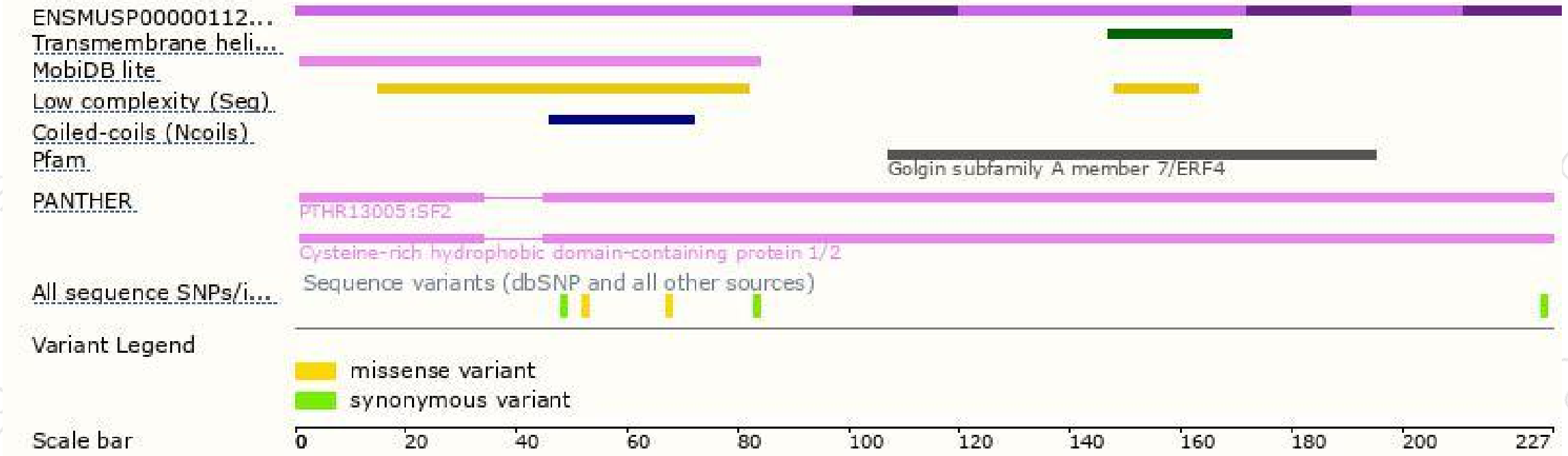
The strategy is based on the design of *Chic1-201* transcript, The transcription is shown below



Genomic location distribution



Protein domain



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

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