

Cxxc1 Cas9-KO Strategy

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Design Date:

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Project Overview

Project Name

Cxxc1

Project type

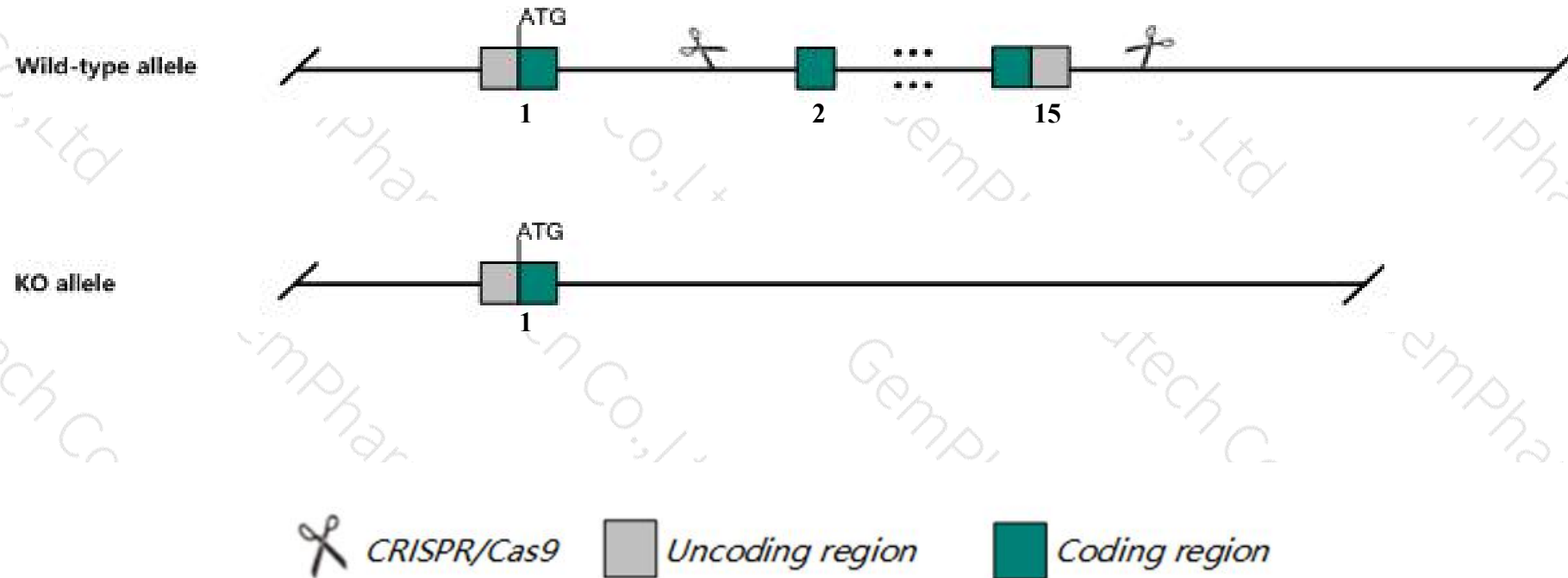
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cxxc1* gene. The schematic diagram is as follows:



- The *Cxxc1* gene has 5 transcripts. According to the structure of *Cxxc1* gene, exon2-exon15 of *Cxxc1-201* (ENSMUST00000025444.7) transcript is recommended as the knockout region. The region contains most 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 *Cxxc1* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a knock-out allele exhibit peri-implantation lethality and failure to gastrulate.
- The *Cxxc1* gene is located on the Chr18. 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)

Cxxc1 CXXC finger 1 (PHD domain) [Mus musculus (house mouse)]

Gene ID: 74322, updated on 17-Feb-2019

Summary



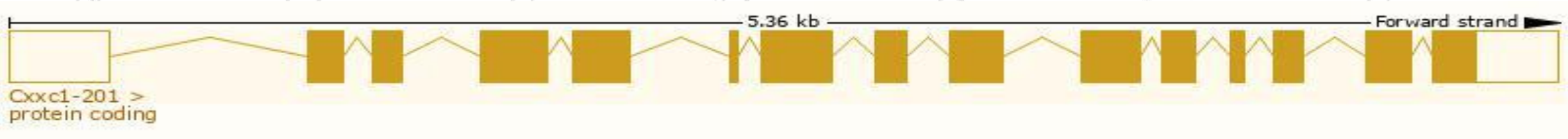
Official Symbol	Cxxc1 provided by MGI
Official Full Name	CXXC finger 1 (PHD domain) provided by MGI
Primary source	MGI:MGI:1921572
See related	Ensembl:ENSMUSG00000024560
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2410002I16Rik, 5830420C16Rik, AI426635, Cfp1, Cgbp, PHF18
Expression	Ubiquitous expression in thymus adult (RPKM 26.1), spleen adult (RPKM 21.1) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

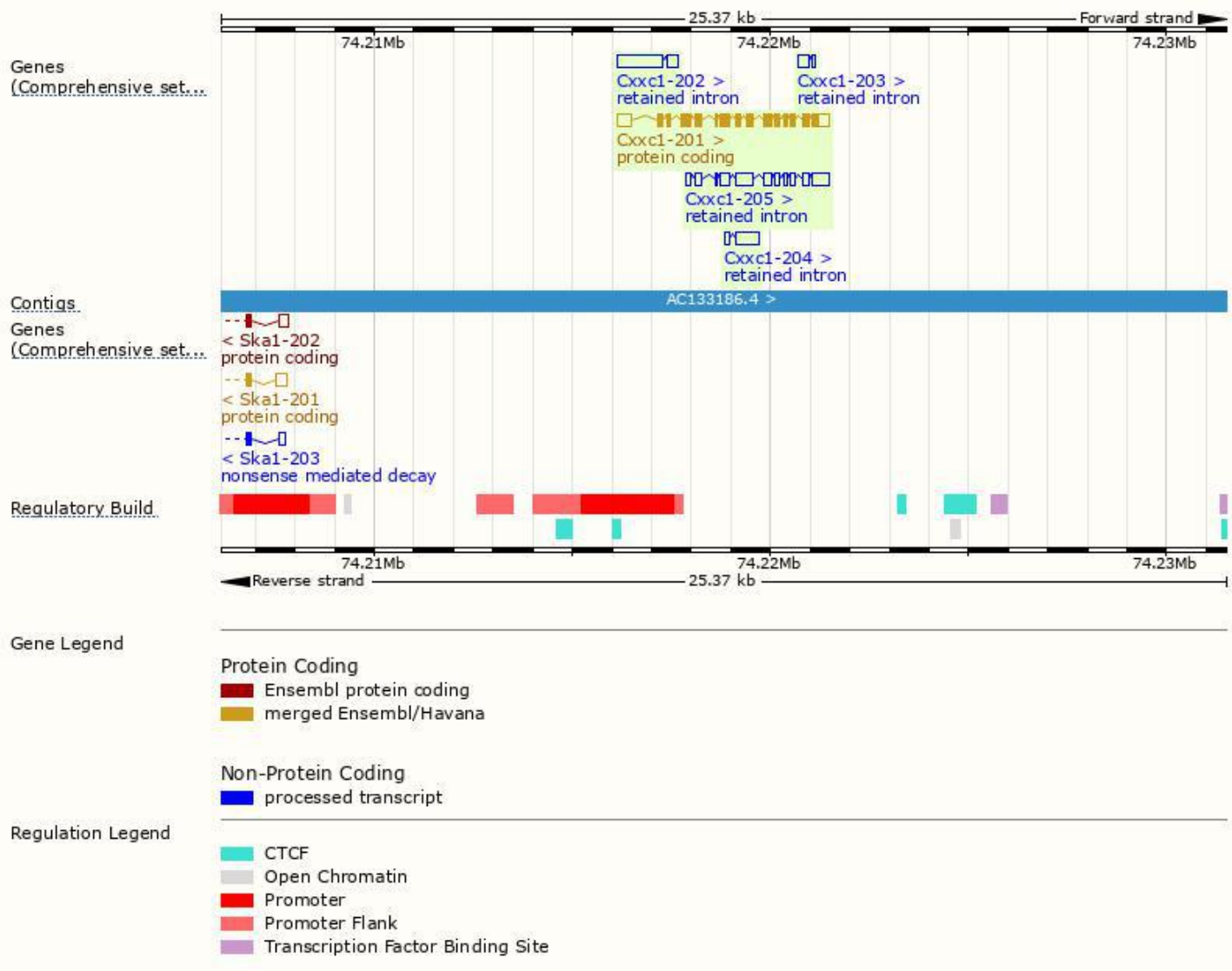
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cxxc1-201	ENSMUST00000025444.7	2620	660aa	Protein coding	CCDS50320	Q541B1 Q9CWW7	TSL:1 GENCODE basic APPRIS P1
Cxxc1-205	ENSMUST00000238176.1	2085	No protein	Retained intron	-	-	
Cxxc1-202	ENSMUST00000236663.1	1460	No protein	Retained intron	-	-	
Cxxc1-204	ENSMUST00000238037.1	719	No protein	Retained intron	-	-	
Cxxc1-203	ENSMUST00000236679.1	354	No protein	Retained intron	-	-	

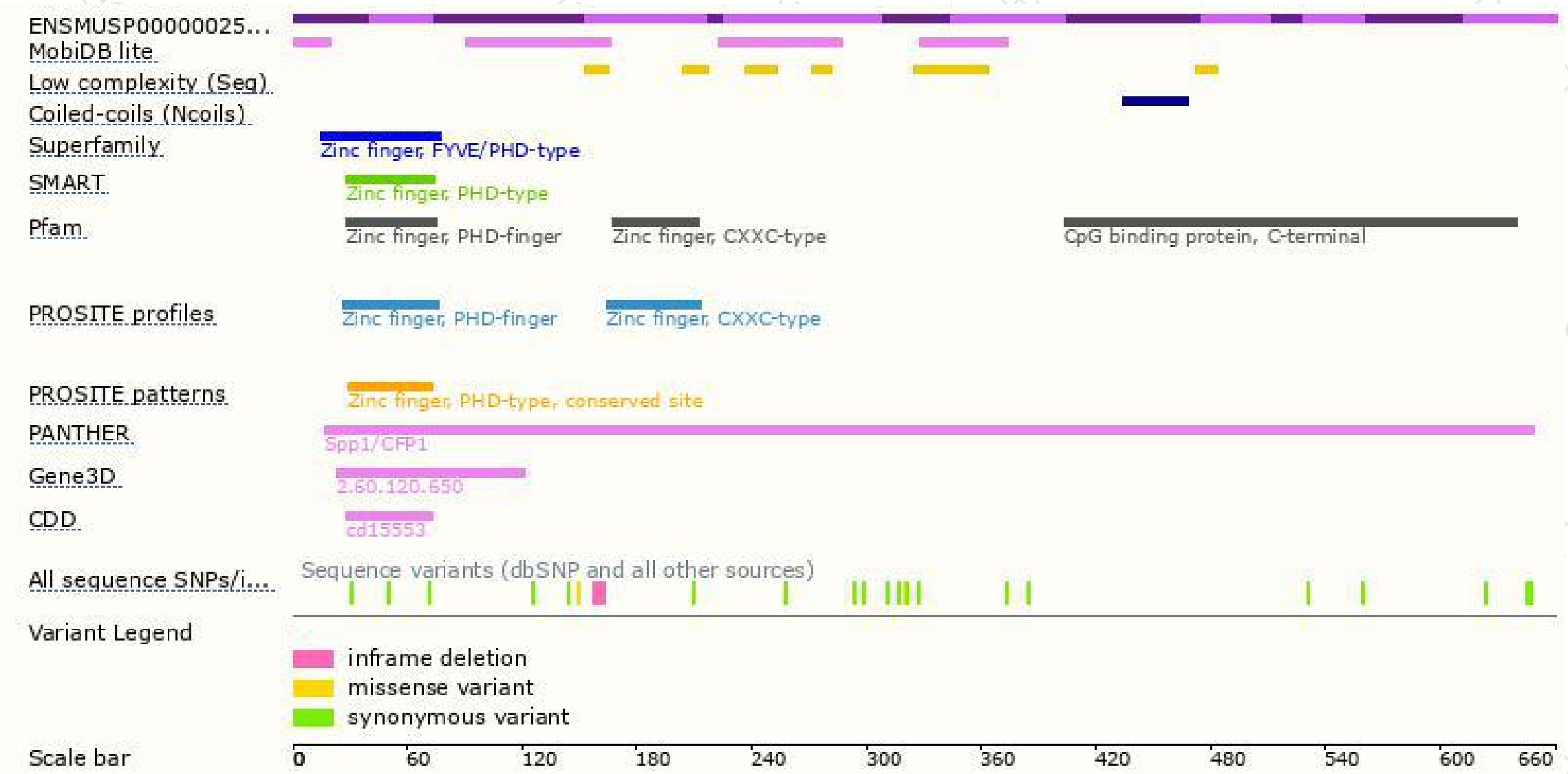
The strategy is based on the design of *Cxxc1-201* transcript,The transcription is shown below



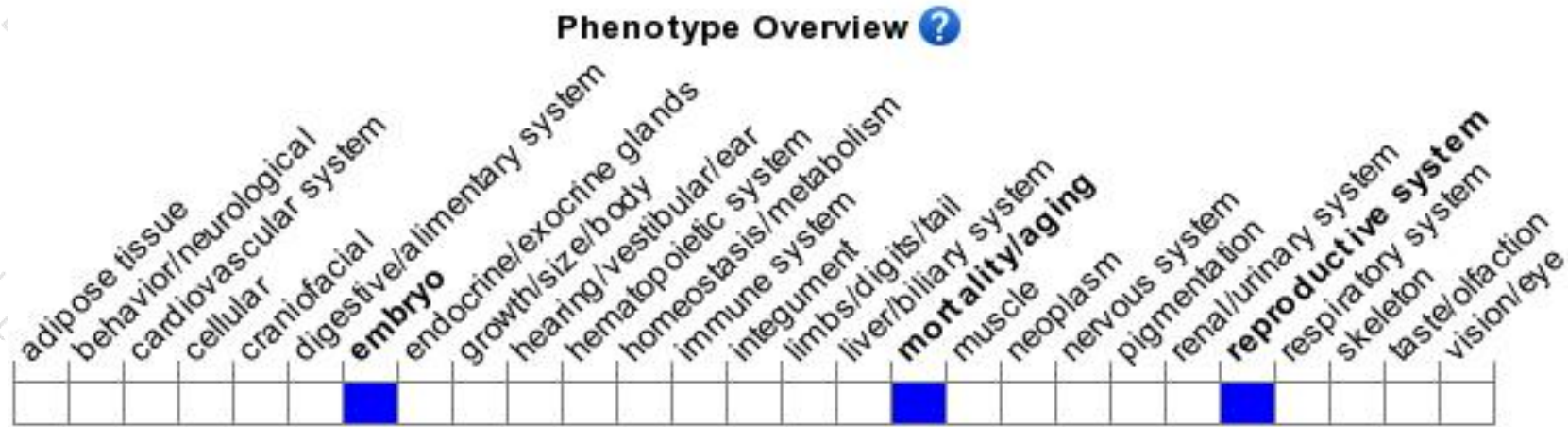
Genomic location distribution



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/>).

According to the existing MGI data, Mice homozygous for a knock-out allele exhibit peri-implantation lethality and failure to gastrulate.

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

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