

***Zc3h12b* Cas9-KO Strategy**

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Reviewer:

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Design Date:

2019-11-14

Project Overview

Project Name

Zc3h12b

Project type

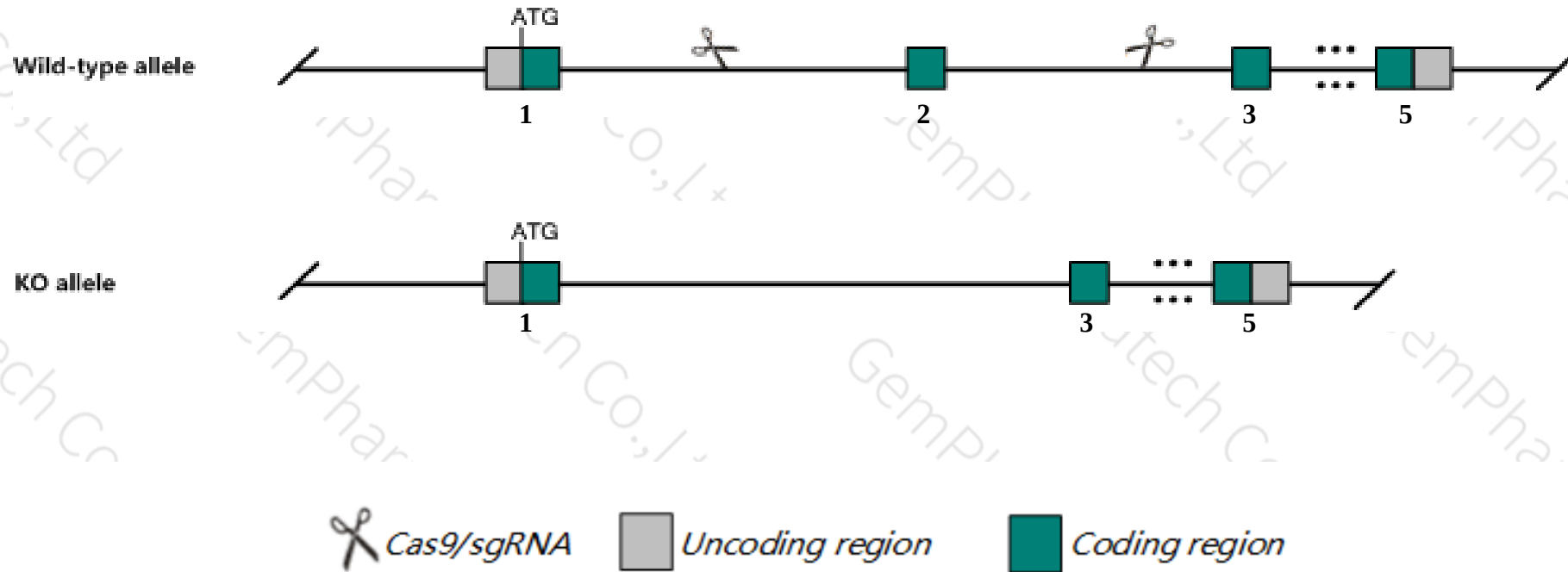
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zc3h12b* gene. The schematic diagram is as follows:



- The *Zc3h12b* gene has 4 transcripts. According to the structure of *Zc3h12b* gene, exon2 of *Zc3h12b-201* (ENSMUST00000082183.7) transcript is recommended as the knockout region. The region contains 140bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Zc3h12b* 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.

- The *Zc3h12b* 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)

Zc3h12b zinc finger CCCH-type containing 12B [Mus musculus (house mouse)]

Gene ID: 547176, updated on 31-Jan-2019

Summary



Official Symbol Zc3h12b provided by [MGI](#)

Official Full Name zinc finger CCCH-type containing 12B provided by [MGI](#)

Primary source [MGI:MGI:2442133](#)

See related [Ensembl:ENSMUSG00000035045](#)

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 A130028J20Rik, CXorf32, Gm373

Expression Broad expression in frontal lobe adult (RPKM 1.7), cortex adult (RPKM 1.7) and 19 other tissues [See more](#)

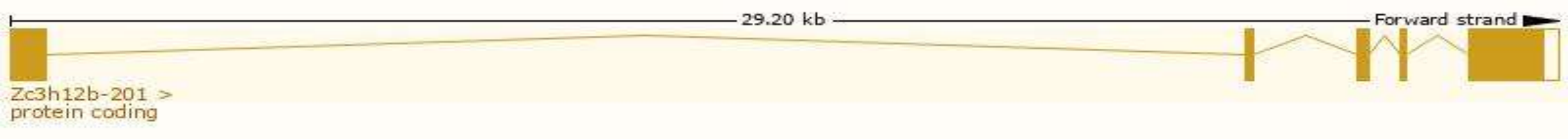
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

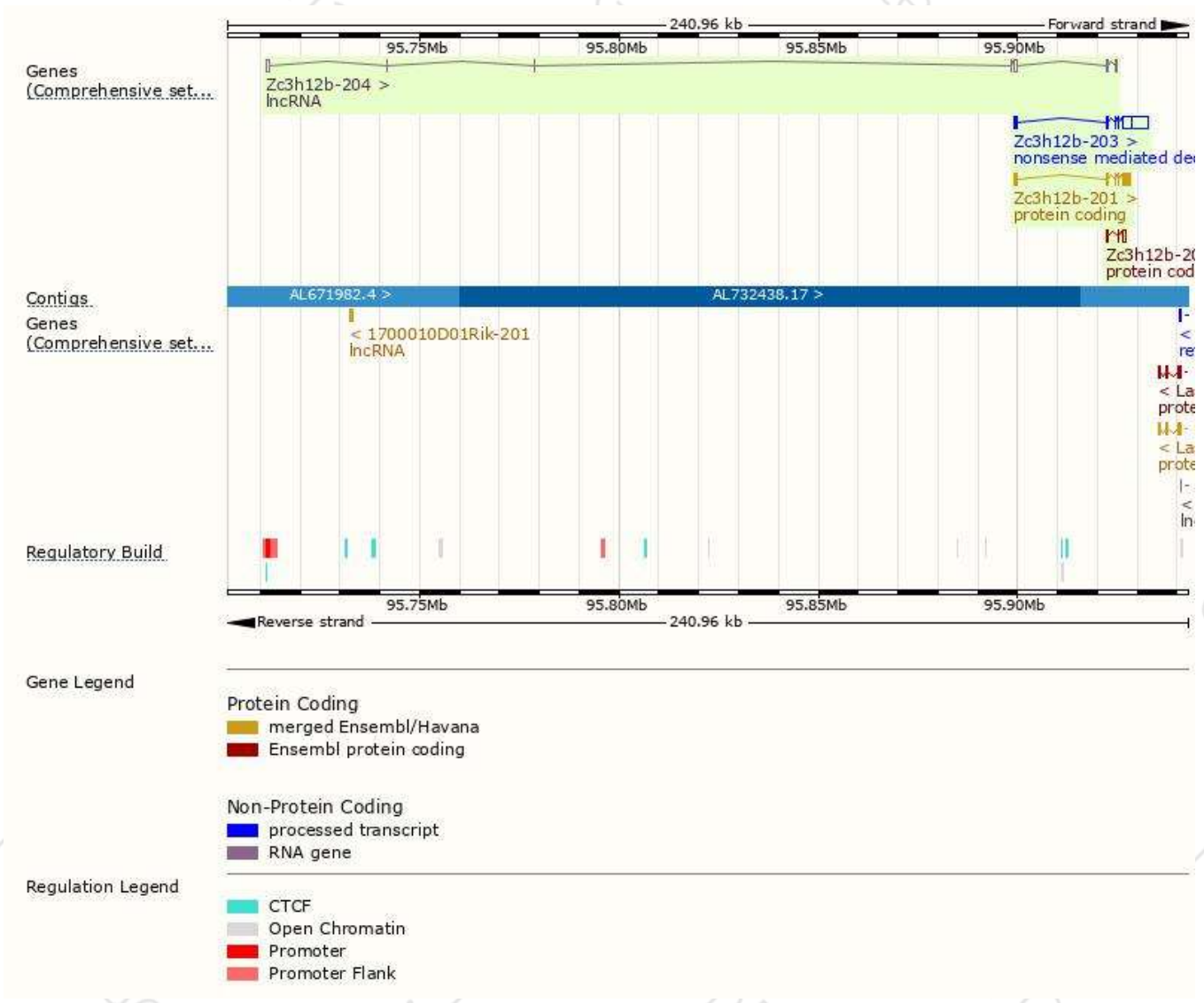
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Zc3h12b-201	ENSMUST00000082183.7	2831	835aa	Protein coding	CCDS41069	G3X9I7	TSL:5 GENCODE basic APPRIS P1
Zc3h12b-202	ENSMUST00000127461.2	758	53aa	Protein coding	-	A2BE29	CDS 5' incomplete TSL:2
Zc3h12b-203	ENSMUST00000145362.3	6914	114aa	Nonsense mediated decay	-	S4R1K0	CDS 5' incomplete TSL:5
Zc3h12b-204	ENSMUST00000150123.7	1916	No protein	lncRNA	-	-	TSL:1

The strategy is based on the design of *Zc3h12b-201* transcript,The transcription is shown below



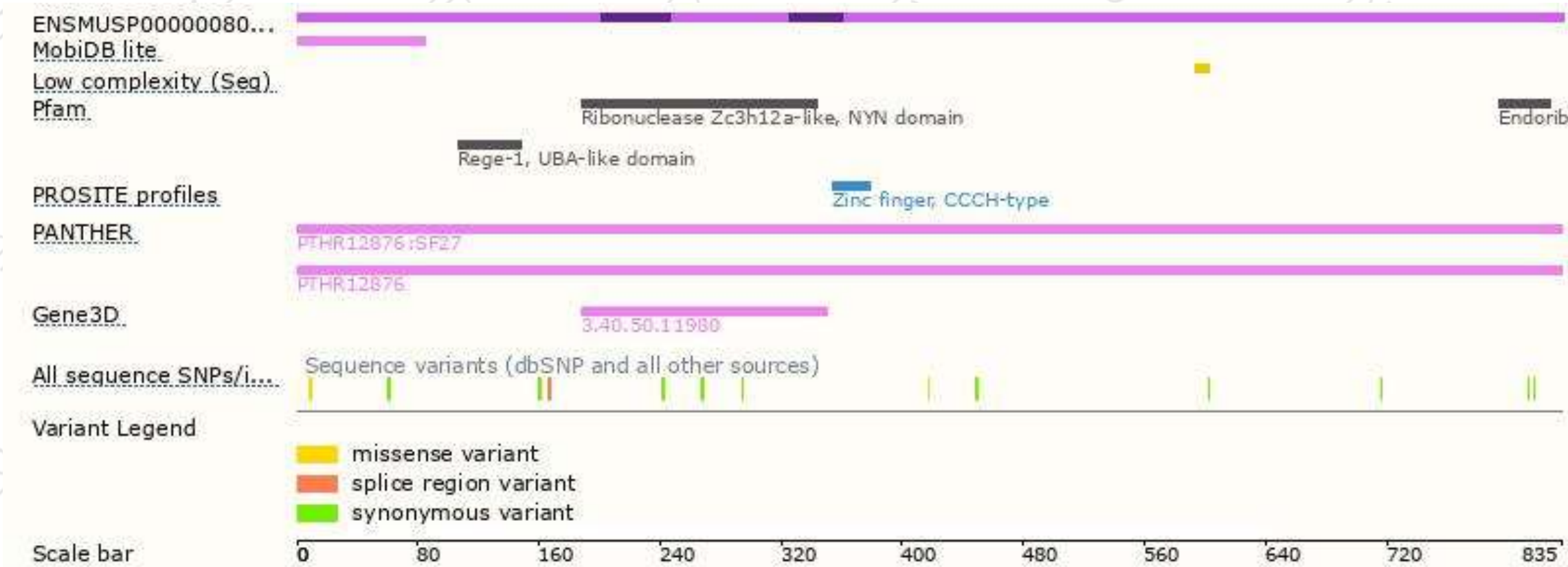
Genomic location distribution



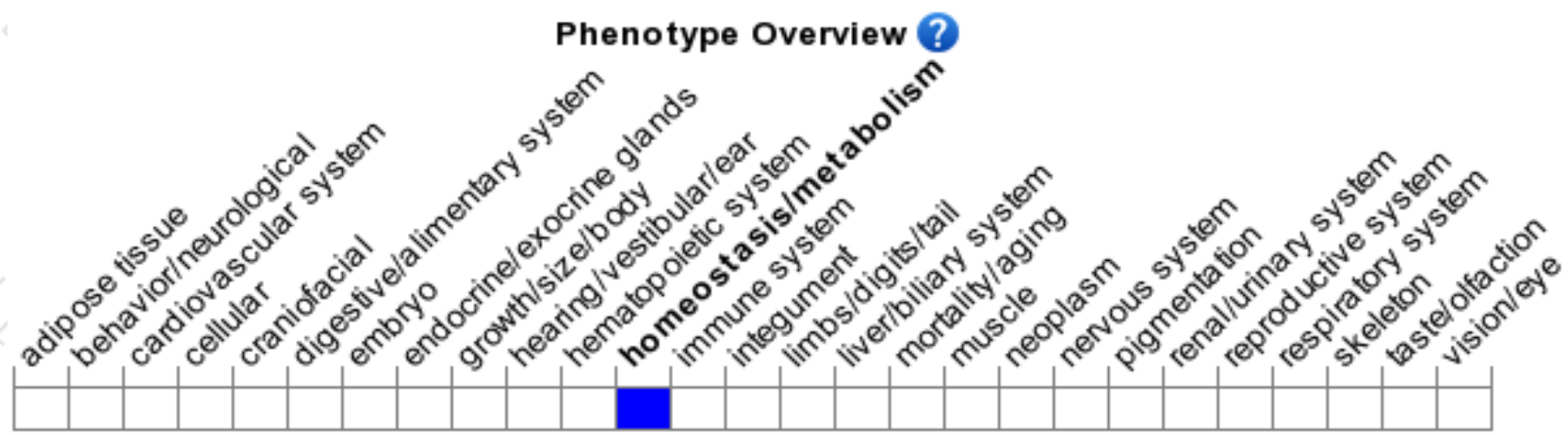
Protein domain



集萃药康
GemPharmatech



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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