Zc3h12c Cas9-KO *Strategy*

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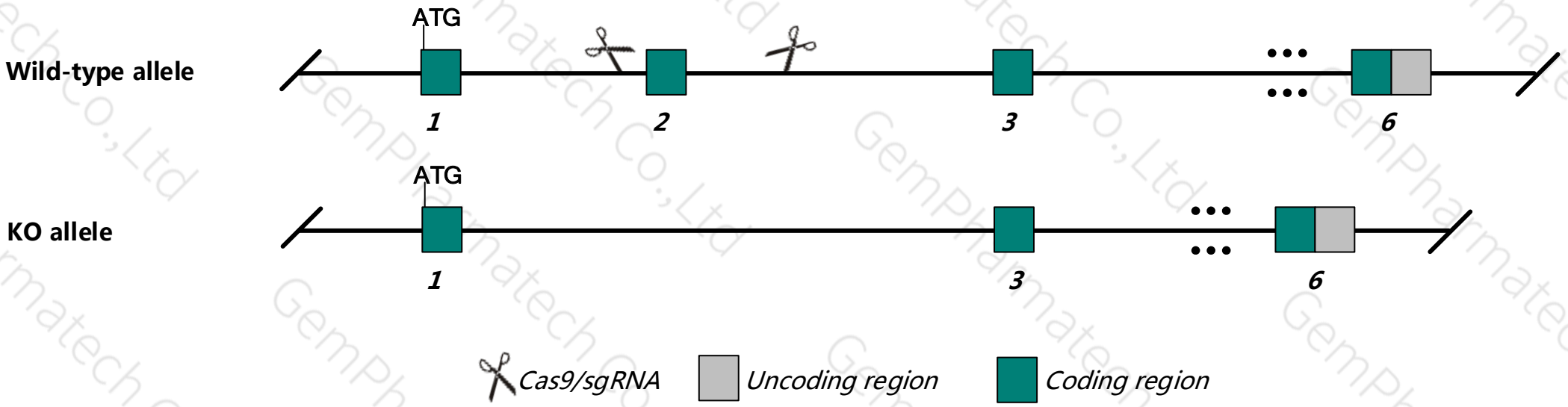
Design Date: **2019-7-18**

Project Overview

Project Name	***Zc3h12c***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Zc3h12c* gene. The schematic diagram is as follows:



Technical routes

- The *Zc3h12c* gene has 2 transcripts.According to the structure of *Zc3h12c* gene, exon2 of *Zc3h12c*-201 (ENSMUST00000165519.1) transcript is recommended as the knockout region.The region contains 752bp coding sequence.Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Zc3h12c* gene. The brief process is as follows: sgRNA was transcribed in vitro.Cas9, 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 *Zc3h12c* gene is located on the Chr9. 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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Zc3h12c zinc finger CCCH type containing 12C [*Mus musculus* (house mouse)]

Gene ID: 244871, updated on 8-Dec-2018

Summary

Official Symbol	Zc3h12c provided by MGI
Official Full Name	zinc finger CCCH type containing 12C provided by MGI
Primary source	MGI:MGI:3026959
See related	Ensembl:ENSMUSG00000035164
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	mKIAA1726; A230108E06; C230027N18Rik
Expression	Ubiquitous expression in CNS E11.5 (RPKM 3.2), whole brain E14.5 (RPKM 3.1) and 26 other tissues See more
Orthologs	human all

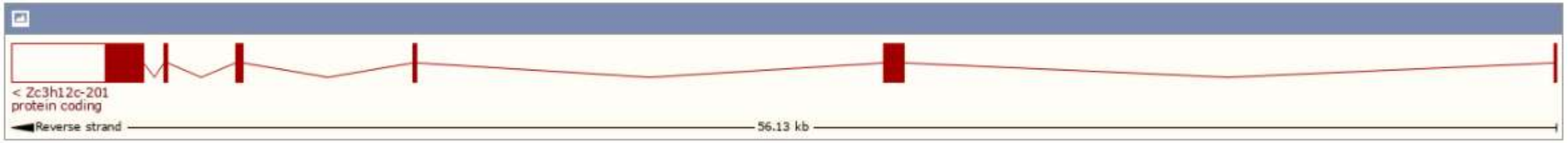
Transcript information（Ensembl）

The gene has 2 transcripts, and all transcripts are shown below:

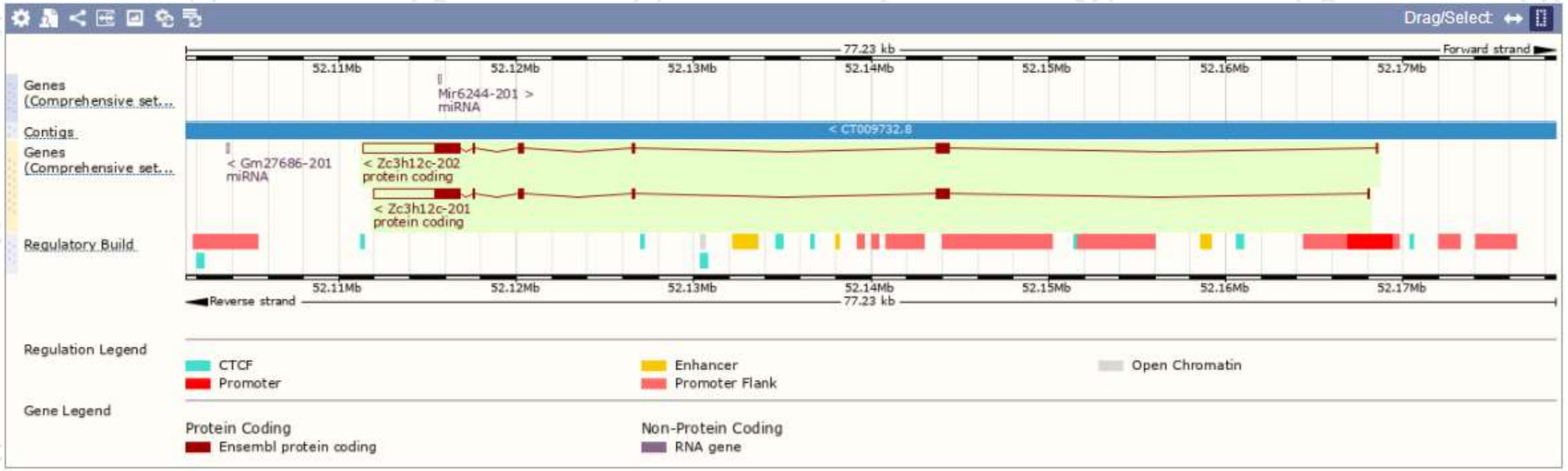
Show/hide columns (1 hidden) Filter

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	RefSeq	Flags
Zc3h12c-201	ENSMUST00000165519.1	6133	903aa	Protein coding	CCDS52794	E9Q1I3	NM_001162921 NP_001156393	TSL:5 GENCODE basic
Zc3h12c-202	ENSMUST00000213645.1	6764	884aa	Protein coding	-	Q5DTV4	-	TSL:5 GENCODE basic APPRIS P1

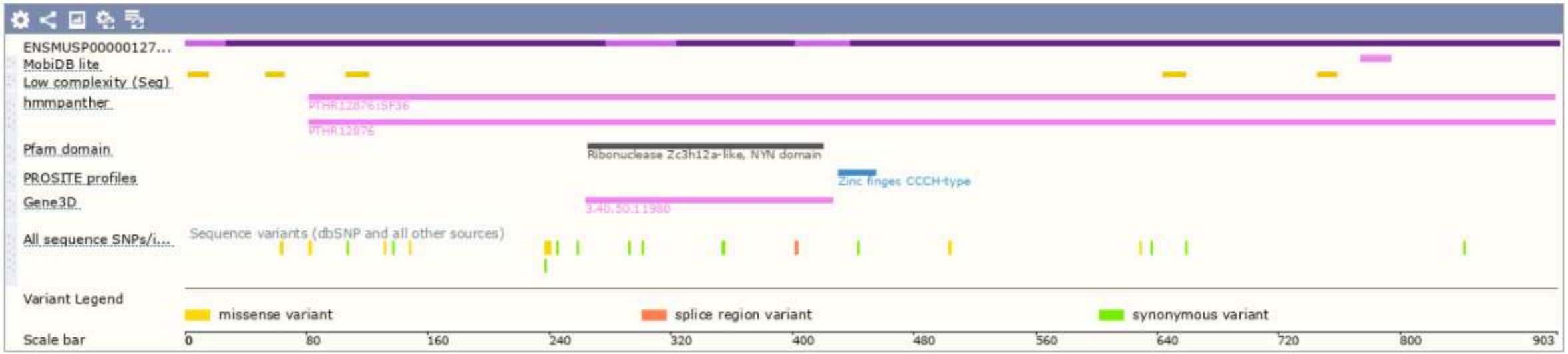
The strategy is based on the design of *Zc3h12c*-201 transcript,The transcription is shown below



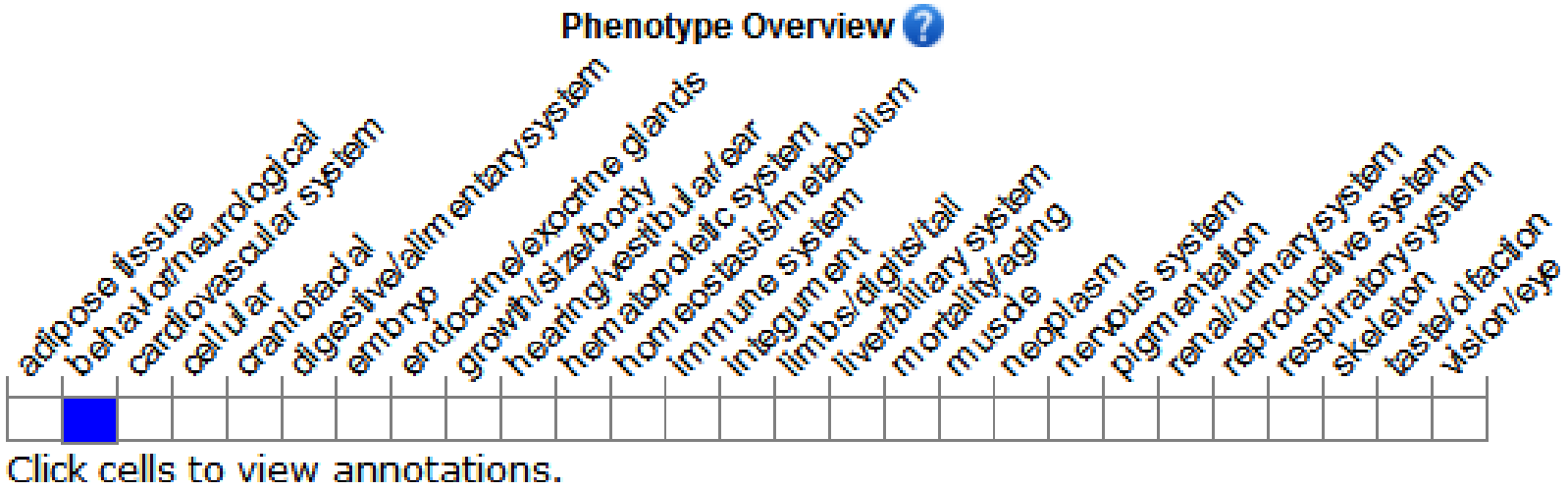
Genomic location distribution



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/) .

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

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