

Fezf1 Cas9-KO Strategy

Designer:

Yanhua Shen

Reviewer:

Xueting Zhang

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Project Overview

Project Name

Fezf1

Project type

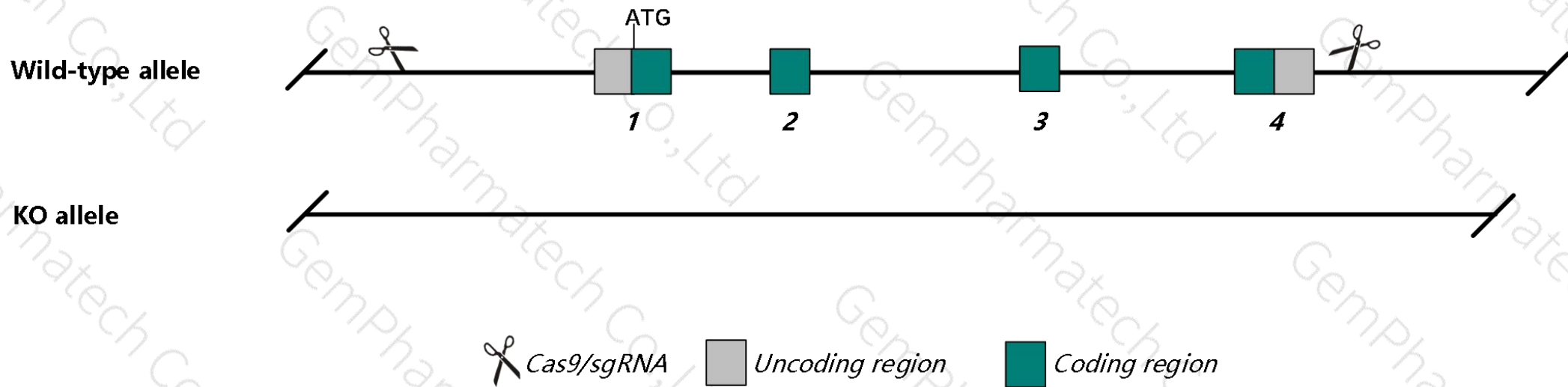
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Fezf1* gene. The schematic diagram is as follows:



- The *Fezf1* gene has 1 transcript. According to the structure of *Fezf1* gene, exon1-exon4 of *Fezf1*-201 (ENSMUST00000031709.6) transcript is recommended as the knockout region. The region contains all of coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Fezf1* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a null mutation of this gene display neonatal lethality, impaired olfactory bulb development and impaired olfactory bulb interneuron migration.
- The *Fezf1* gene is located on the Chr6. 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)

Fezf1 Fez family zinc finger 1 [*Mus musculus* (house mouse)]

Gene ID: 73191, updated on 10-Oct-2019

Summary

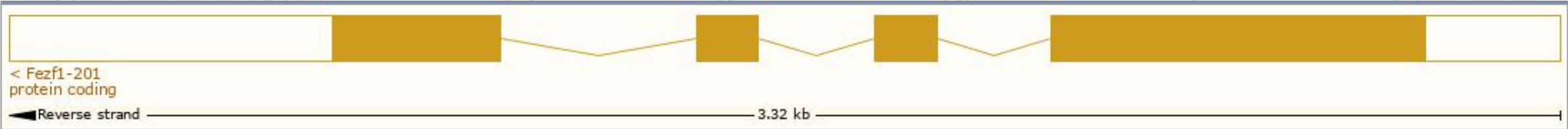
Official Symbol	Fezf1 provided by MGI
Official Full Name	Fez family zinc finger 1 provided by MGI
Primary source	MGI:MGI:1920441
See related	Ensembl:ENSMUSG00000029697
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Fez; fez-like; Zfp312-like; 3110069A13Rik
Expression	Biased expression in whole brain E14.5 (RPKM 3.0), CNS E11.5 (RPKM 2.7) and 2 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

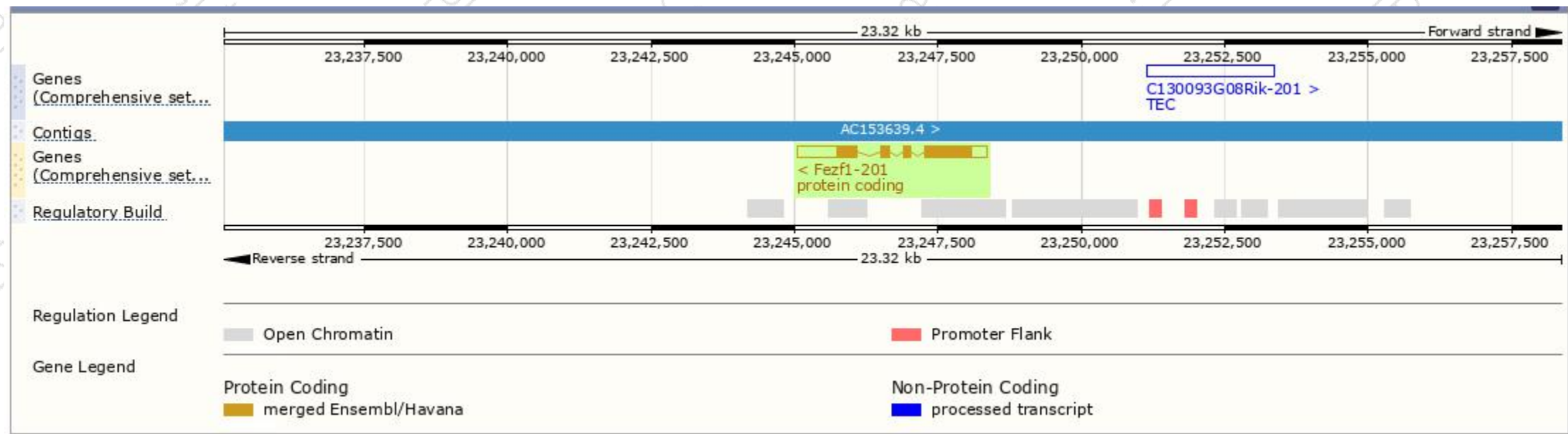
The gene has 1 transcript,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Fezf1-201	ENSMUST00000031709.6	2409	475aa	Protein coding	CCDS51725	Q0VDDQ9	TSL:1 Gencode basic APPRIS P1

The strategy is based on the design of *Fezf1-201* transcript,The transcription is shown below



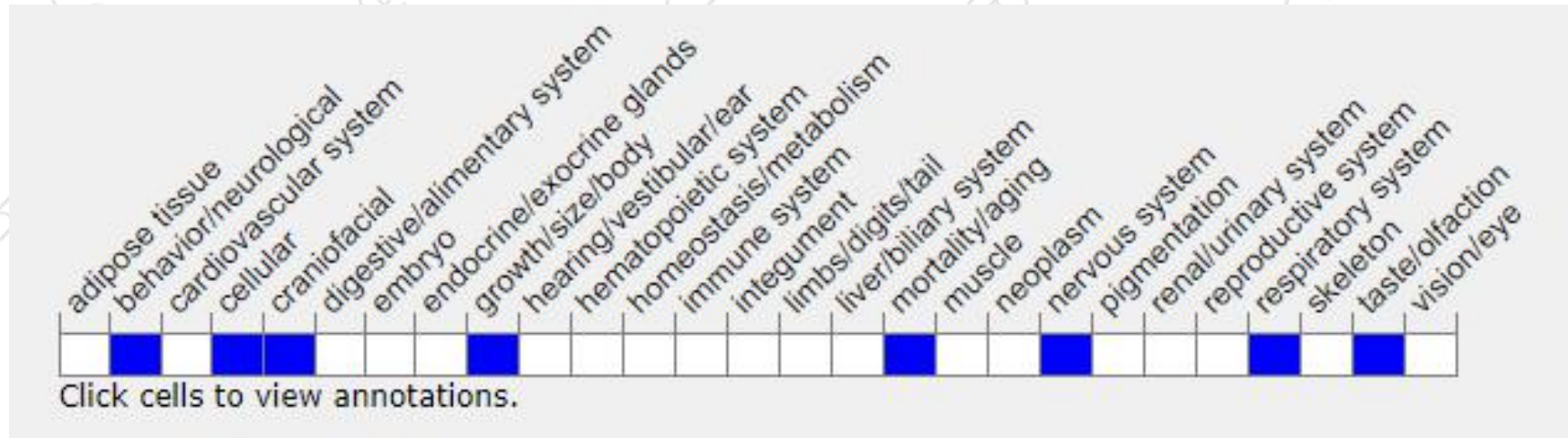
Genomic location distribution



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 null mutation of this gene display neonatal lethality, impaired olfactory bulb development and impaired olfactory bulb interneuron migration.

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

Tel: 400-9660890

