

Tcf7l2 Cas9-KO Strategy

Designer: Shilei Zhu

Project Overview

Project Name

Tcf7l2

Project type

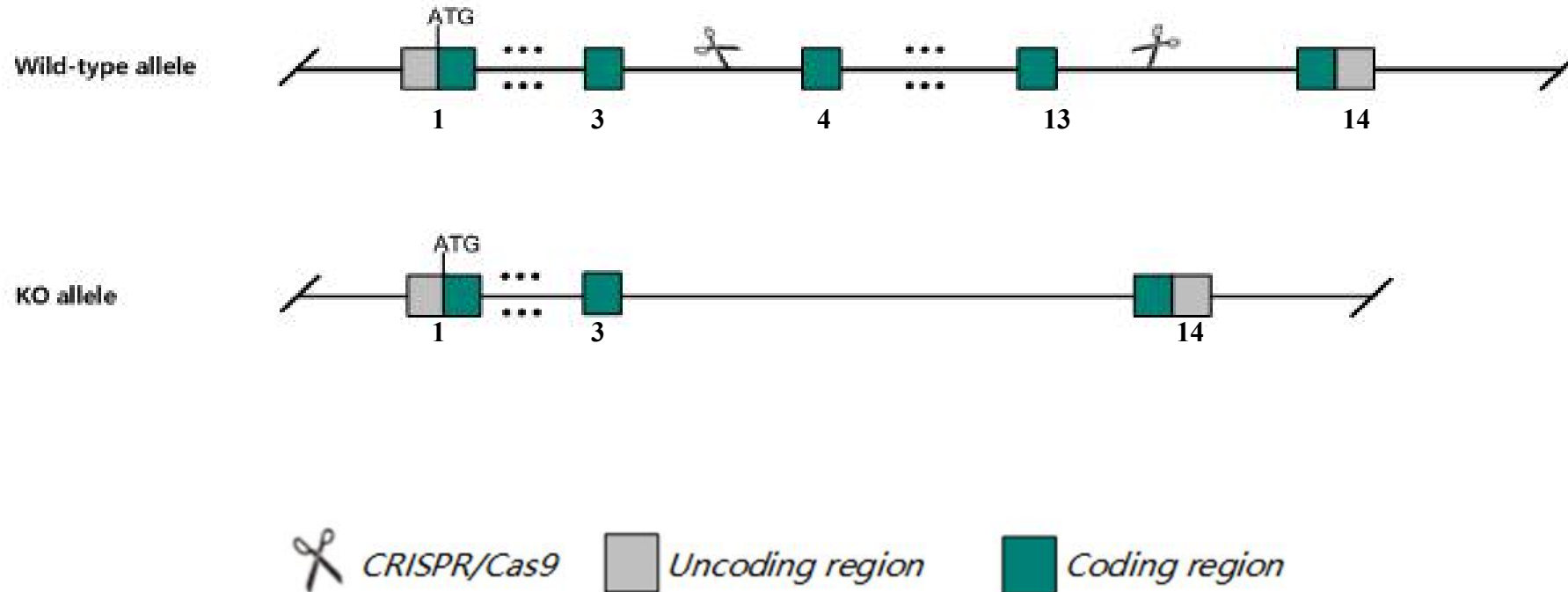
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Tcf7l2* gene. The schematic diagram is as follows:



The *Tcf7l2* gene has 22 transcripts. According to the structure of *Tcf7l2* gene, exon4-exon13 of *Tcf7l2-209* (ENSMUST00000111656.7) transcript is recommended as the knockout region. The region contains 992bp coding sequence. Knock out the region will result in disruption of protein function.

In this project we use CRISPR/Cas9 technology to modify *Tcf7l2* gene. The brief process is as follows: CRISPR/Cas9 system

According to the existing MGI data, Animals homozygous for a targeted mutation exhibit intestinal epithelia abnormalities and die shortly after birth. Mice heterozygous for some mutations display abnormalities in glucose homeostasis.

The *Tcf7l2* gene is located on the Chr19. 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.

Tcf7l2 transcription factor 7 like 2, T cell specific, HMG box [Mus musculus (house mouse)]

Gene ID: 21416, updated on 5-Mar-2019

Summary



Official Symbol	Tcf7l2 provided by MGI
Official Full Name	transcription factor 7 like 2, T cell specific, HMG box provided by MGI
Primary source	MGI:MGI:1202879
See related	Ensembl:ENSMUSG000000024985
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	TCF4B, TCF4E, Tcf-4, Tcf4
Expression	Broad expression in whole brain E14.5 (RPKM 35.3), CNS E14 (RPKM 21.4) and 25 other tissues See more
Orthologs	human all

Transcript information Ensembl

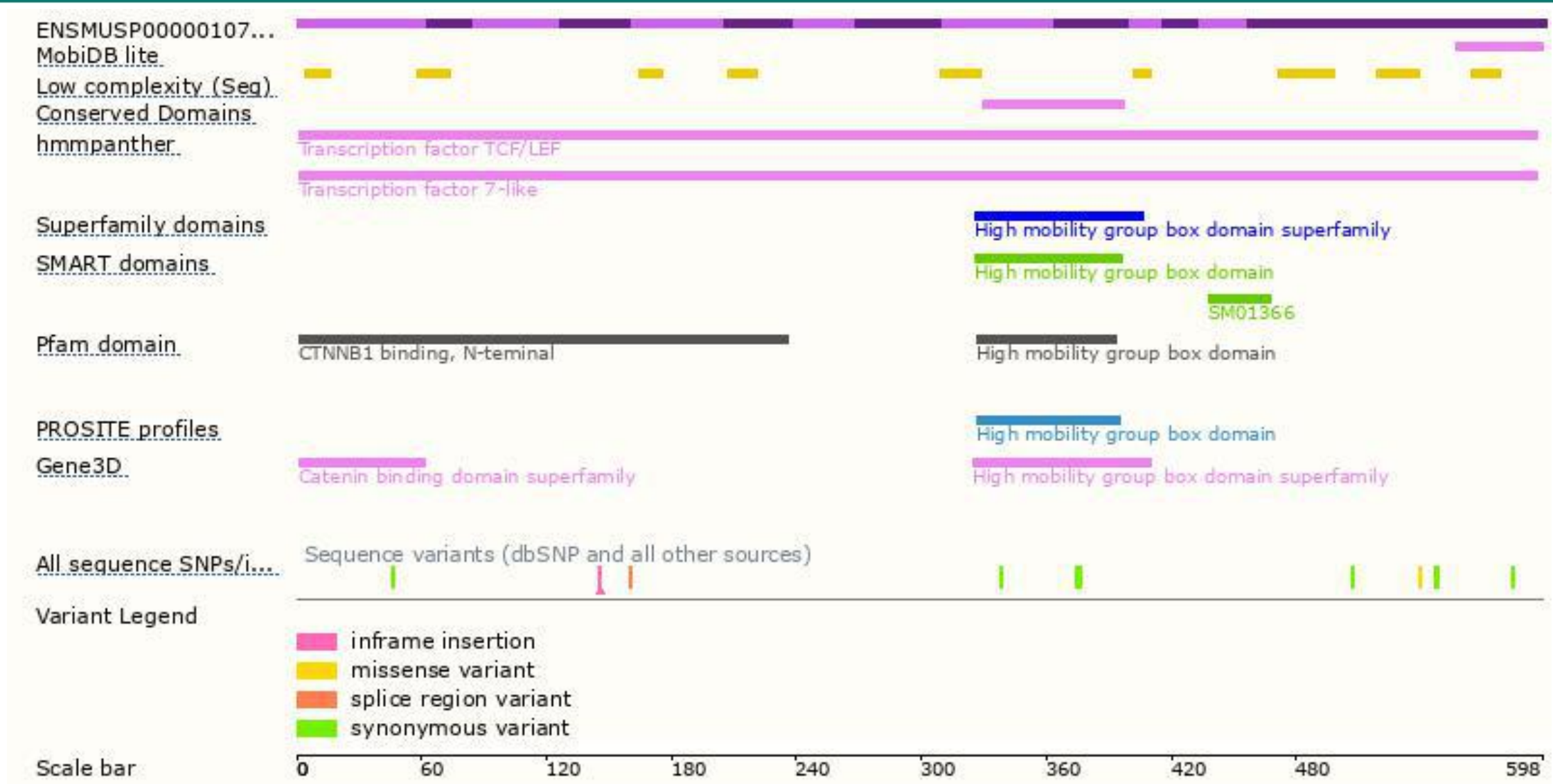
The gene has 22 transcripts, all transcripts are shown below:

The strategy is based on the design of *Tcf7l2-209* transcript, The transcription is shown below

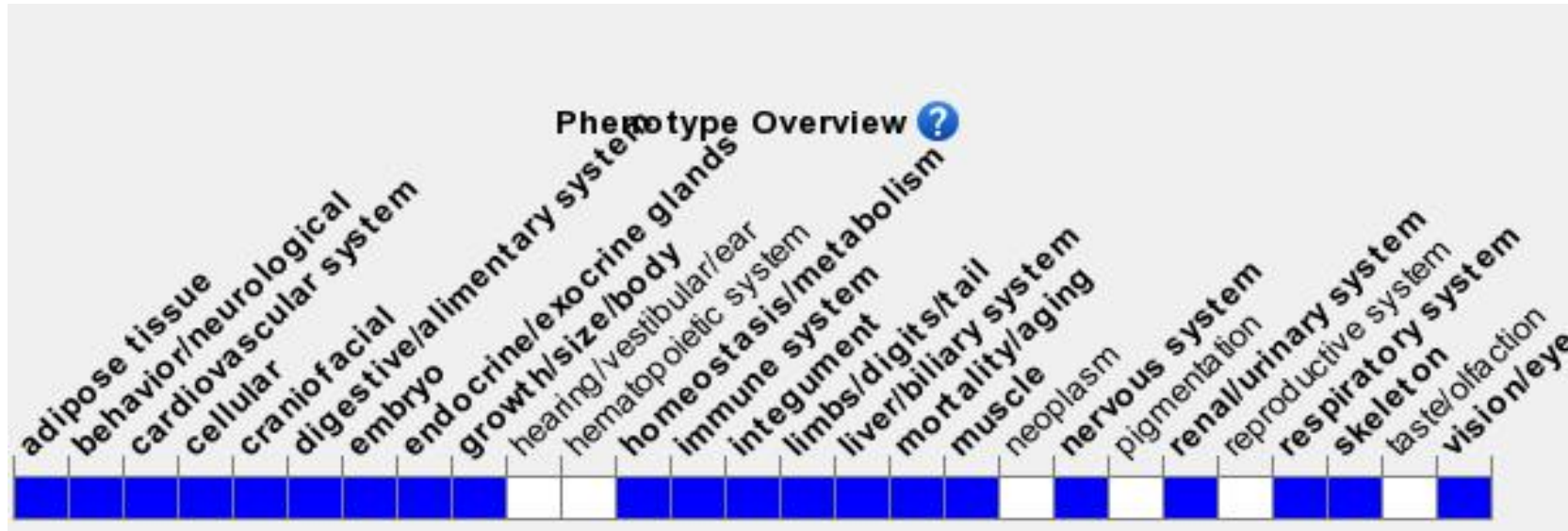


Genomic location distribution

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, Animals homozygous for a targeted mutation exhibit intestinal epithelia abnormalities and die shortly after birth. Mice heterozygous for some mutations display abnormalities in glucose homeostasis

If you have any questions, you are welcome to inquire.
Tel: 400-9660890

