

Gtf2f1 Cas9-KO Strategy

Designer:

Ruirui Zhang

Reviewer:

Huimin Su

Design Date:

2019-8-23

Project Overview

Project Name

Gtf2f1

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gtf2f1* gene. The schematic diagram is as follows:



- The *Gtf2f1* gene has 1 transcript. According to the structure of *Gtf2f1* gene, exon4-exon5 of *Gtf2f1*-201 (ENSMUST00000002733.6) transcript is recommended as the knockout region. The region contains 365bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Gtf2f1* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Gtf2f1* gene is located on the Chr17. 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.
- The distance between exon4 of *Gtf2f1* gene and *Gm17949* is about 3.5kb, this strategy may affect the 5 terminals regulatory function of *Gm17949* gene.
- 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)

Gtf2f1 general transcription factor IIF, polypeptide 1 [*Mus musculus* (house mouse)]

Gene ID: 98053, updated on 12-Aug-2019

Summary

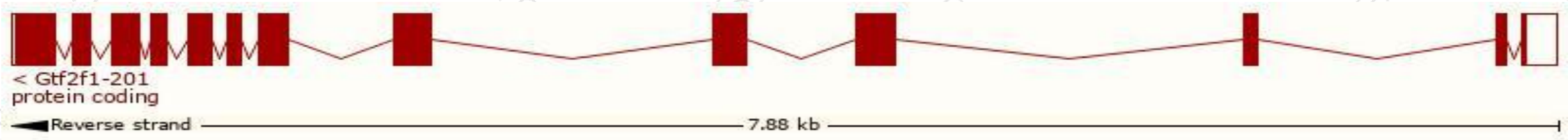
Official Symbol	Gtf2f1 provided by MGI
Official Full Name	general transcription factor IIF, polypeptide 1 provided by MGI
Primary source	MGI:MGI:1923848
See related	Ensembl:ENSMUSG000000002658
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	RAP74; C76800; 2810405L04Rik
Expression	Ubiquitous expression in testis adult (RPKM 78.6), liver E14 (RPKM 38.3) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

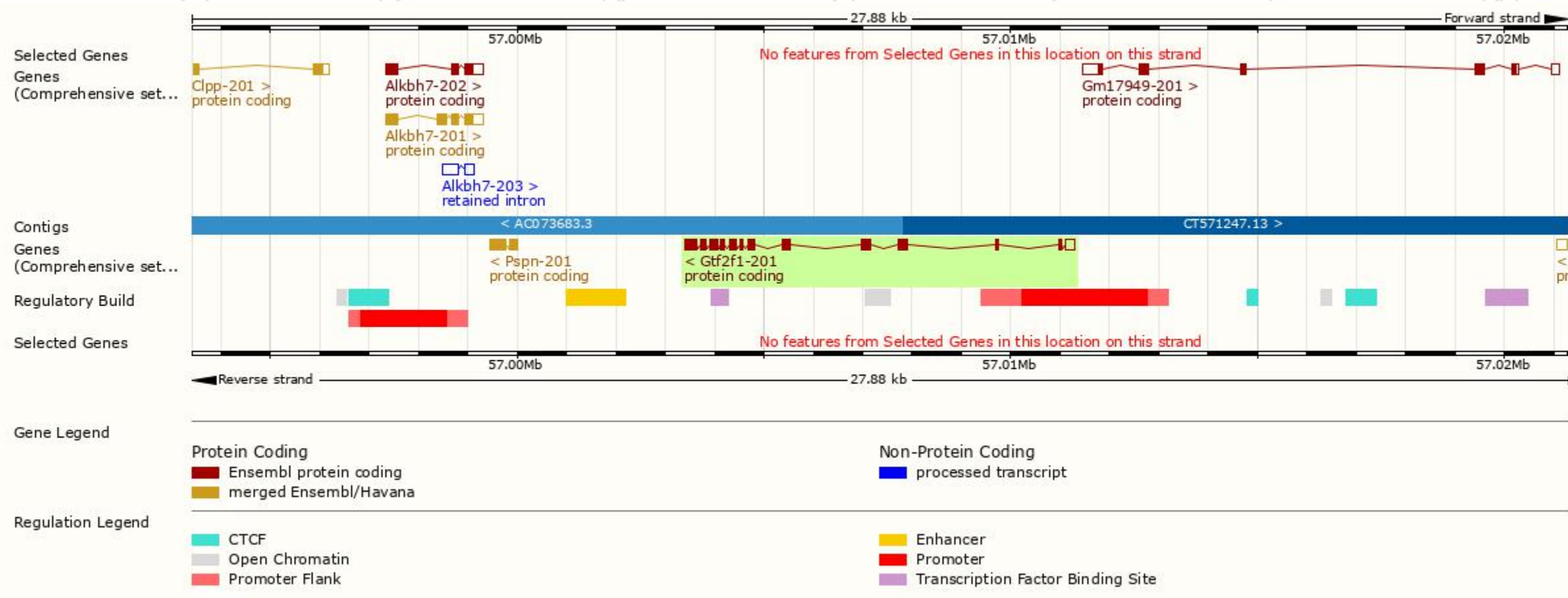
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gtf2f1-201	ENSMUST00000002733.6	1717	508aa	Protein coding	CCDS37667	Q3THK3	TSL:1 GENCODE basic APPRIS P1

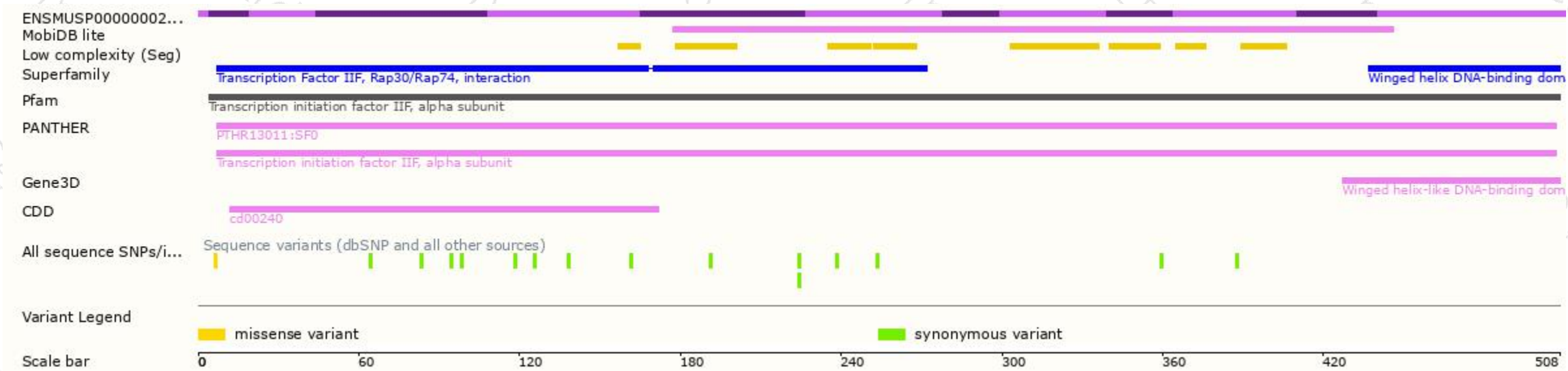
The strategy is based on the design of *Gtf2f1-201* transcript, The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

