GemPharmatech™

Timm29 Cas9-KO Strategy

Designer: Jia Yu

Reviewer: Shenyan Hua

Design Date: 2022-10-9

Overview

Target Gene Name

- *Timm29*

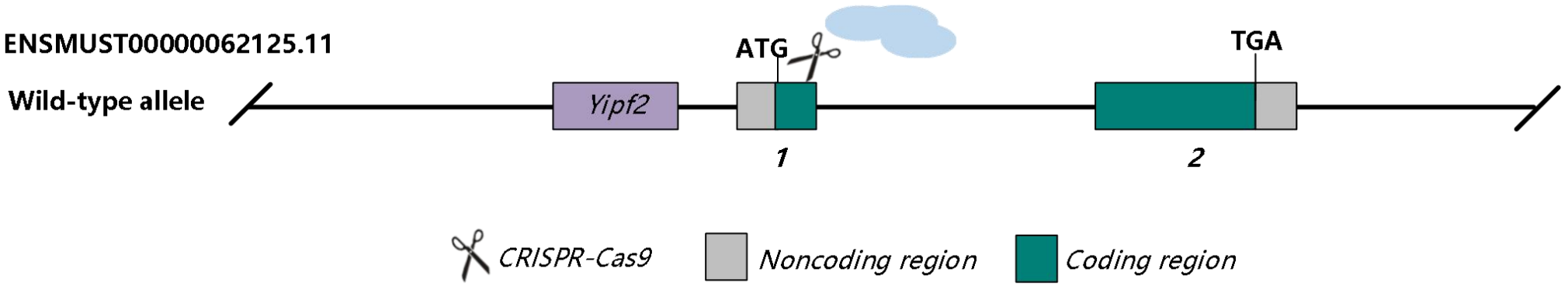
Project Type

- Cas9-KO

Genetic Background

- C57BL/6JGpt

Strain Strategy



Schematic representation of CRISPR-Cas9 engineering used to edit the *Timm29* gene.

Technical Information

- The *Timm29* gene has 1 transcript. According to the structure of *Timm29* gene, part of exon 1 of *Timm29-201* (ENSMUST00000062125.11) transcript is recommended as the knockout region. Knocking out the region will result in disruption of its function.
- In this project we use CRISPR-Cas9 technology to modify *Timm29* gene. The brief process is as follows: gRNAs were transcribed in vitro. Cas9 and gRNAs 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 on-target amplicon sequencing. A stable F1-generation mouse strain was obtained by mating positive F0-generation mice with C57BL/6JGpt mice and confirmation of the desired mutant allele was carried out by PCR and on-target amplicon sequencing.

Gene Information

Timm29 translocase of inner mitochondrial membrane 29 [*Mus musculus* (house mouse)]

Download Datasets

Gene ID: 69773, updated on 26-Sep-2022

Summary

Official Symbol	Timm29 provided by MGI
Official Full Name	translocase of inner mitochondrial membrane 29 provided by MGI
Primary source	MGI:MGI:1917023
See related	Ensembl:ENSMUSG00000048429 AllianceGenome:MGI:1917023
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	TIM29; 1810026J23Rik
Summary	Predicted to enable protein transporter activity. Predicted to be involved in protein insertion into mitochondrial inner membrane. Predicted to act upstream of or within protein transport. Predicted to be located in mitochondrial inner membrane and mitochondrial intermembrane space. Predicted to be part of TIM22 mitochondrial import inner membrane insertion complex. Orthologous to human TIMM29 (translocase of inner mitochondrial membrane 29). [provided by Alliance of Genome Resources, Apr 2022]
Expression	Ubiquitous expression in adrenal adult (RPKM 29.7), whole brain E14.5 (RPKM 24.0) and 28 other tissues See more
Orthologs	human all

NEW **Try the new Gene table**

Try the new Transcript table

Source: https://www.ncbi.nlm.nih.gov/

Transcript Information

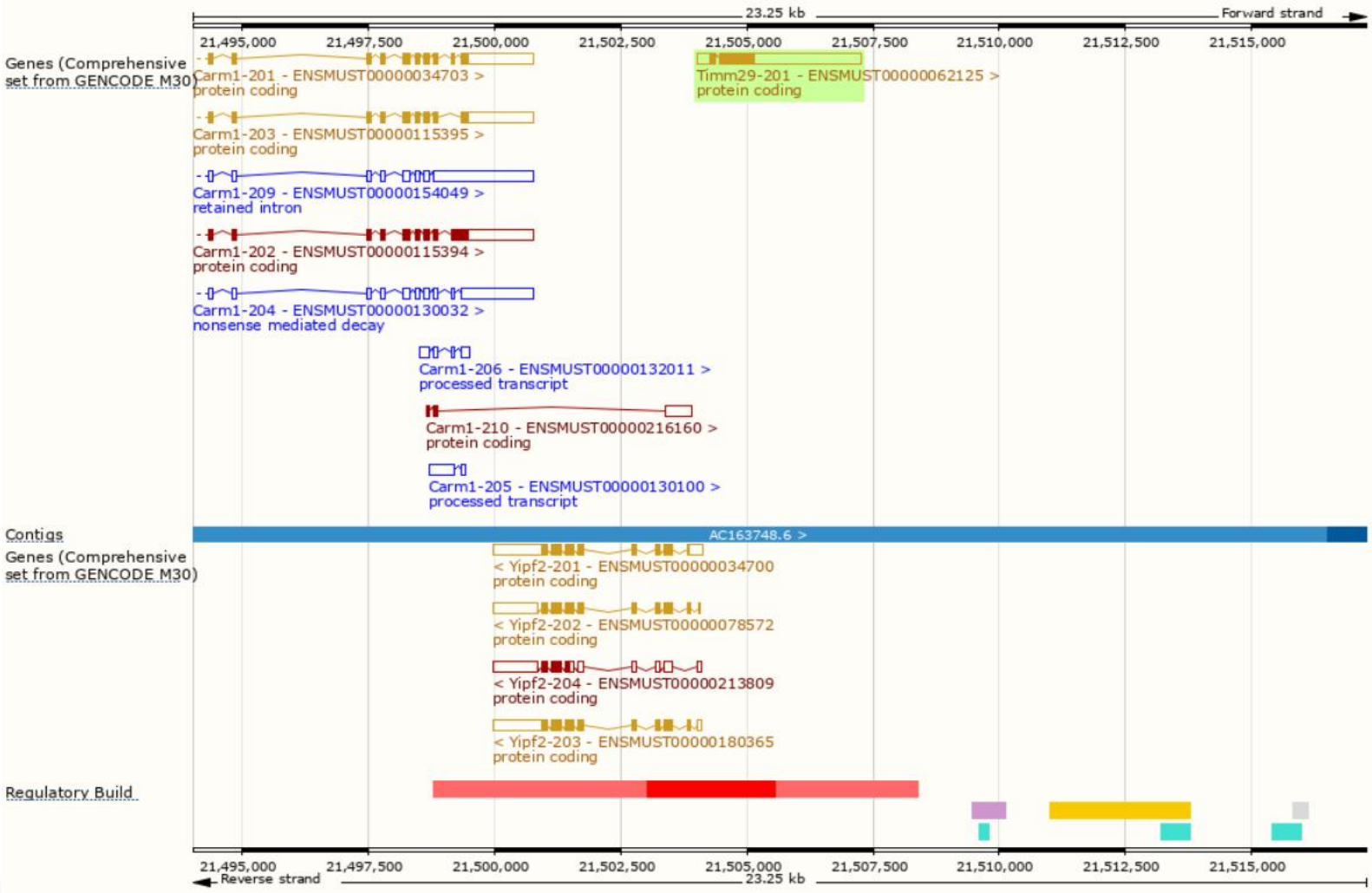
The gene has 1 transcript, all transcripts are shown below:

Transcript ID	Name	bp	Protein	Biotype	CCDS	UniProt Match	Flags
ENSMUST00000062125.11	Timm29-201	3170	266aa	Protein coding	CCDS22908	Q8BGX2	Ensembl Canonical, GENCODE basic, APPRIS P1, TSL:1

The strategy is based on the design of *Timm29-201* transcript, the transcription is shown below:

Source: https://www.ensembl.org

Genomic Information



GemPharmatech™

Source: : https://www.ensembl.org

Important Information

- *Timm29* is located on Chr9. If the knockout mice are crossed with other mouse strains to obtain double homozygous mutant offspring, please avoid the situation that the second gene is on the same chromosome.
- The KO region is about 200 bp away from the 5th end of the *Yipf2* gene, which may affect the regulation of this gene.
- This Strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risks of the mutation on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.