

Meltf Cas9-KO Strategy

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Project Overview

Project Name

Meltf

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Meltf* gene has 1 transcript. According to the structure of *Meltf* gene, exon2-exon9 of *Meltf*-201 (ENSMUST00000023464.5) transcript is recommended as the knockout region. The region contains 1184bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Meltf* gene. The brief process is as follows: CRISPR/Cas9 system v

- According to the existing MGI data, Mice homozygous for a knock-out allele are viable and fertile, exhibit no physical defects, and develop normally with no detectable alterations in iron metabolism.
- The *Melf* gene is located on the Chr16. 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)

Meltf melanotransferrin [Mus musculus (house mouse)]

Gene ID: 30060, updated on 31-Jan-2019

Summary



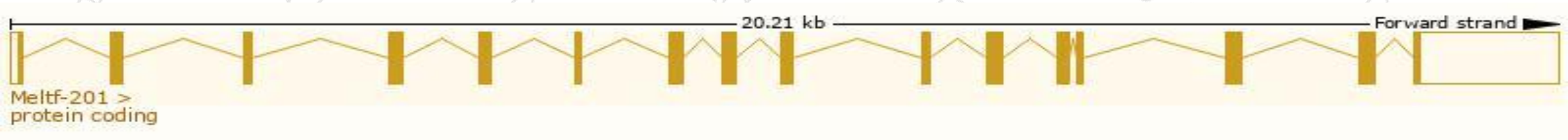
Official Symbol	Meltf provided by MGI
Official Full Name	melanotransferrin provided by MGI
Primary source	MGI:MGI:1353421
See related	Ensembl:ENSMUSG00000022780
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	CD228, MTf, Mfi2
Expression	Biased expression in placenta adult (RPKM 6.3), testis adult (RPKM 4.0) and 5 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

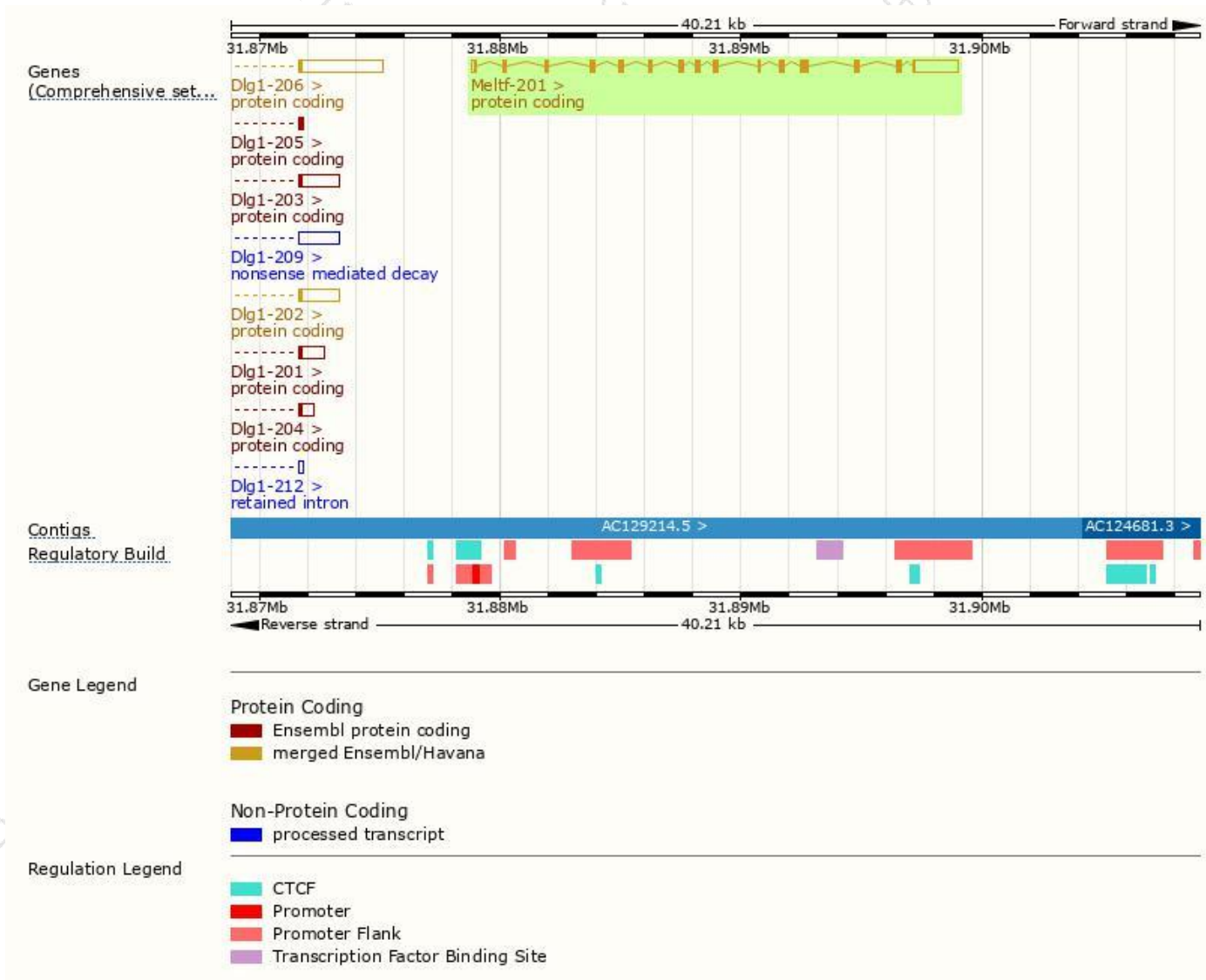
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Meltf-201	ENSMUST00000023464.5	4133	738aa	Protein coding	CCDS28108	Q544J8 Q9R0R1	TSL:1 GENCODE basic APPRIS P1

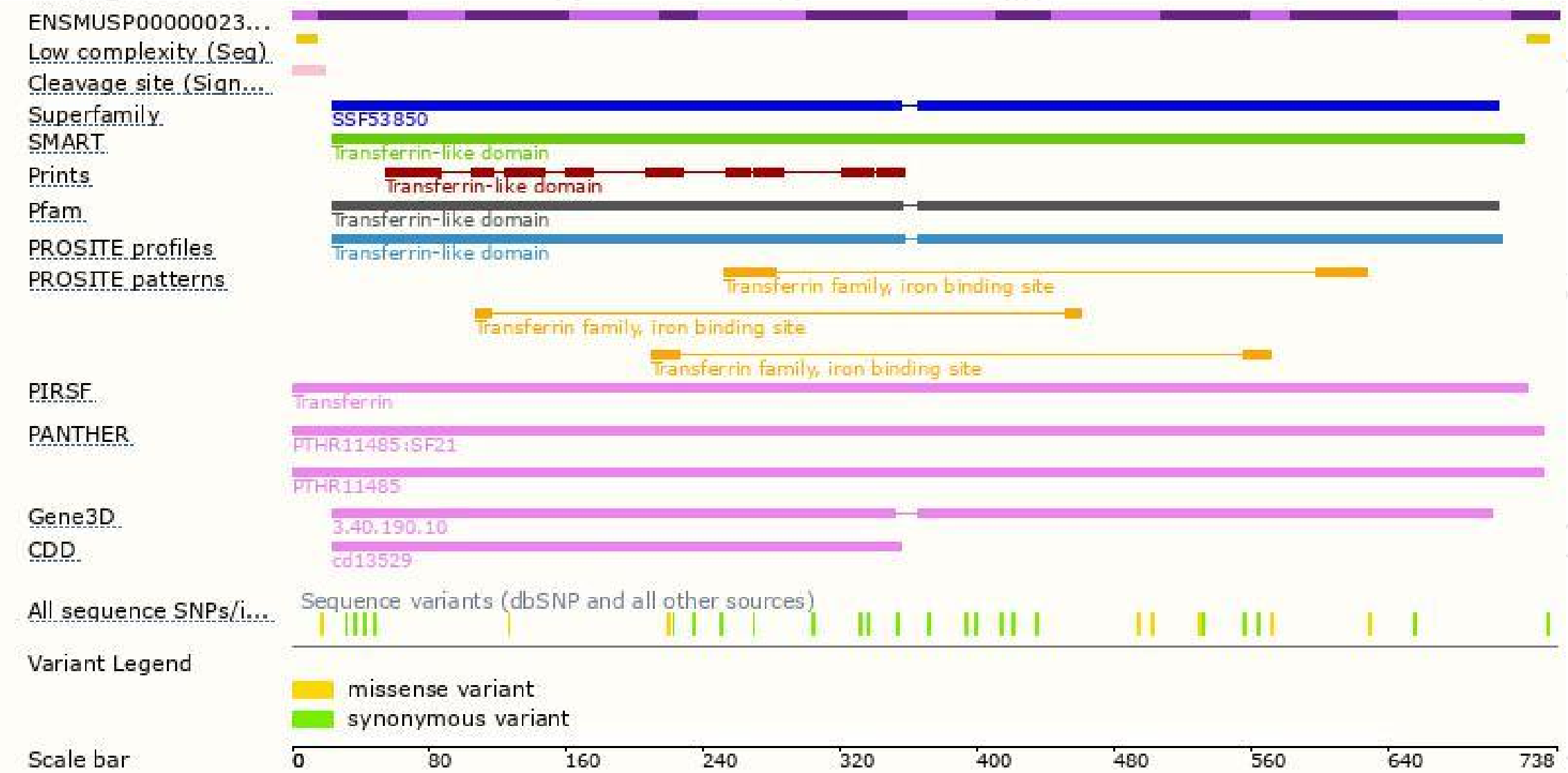
The strategy is based on the design of *Meltf-201* transcript, The transcription is shown below



Genomic location distribution



Protein domain



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

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