Zdhhc19-C142S cas9-ki(PM) Mouse Model Strategy

-CRISPR/Cas9 technology

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Project Overview

Project Name	**Zdhhc19-C142S**
Project type	**cas9-ki(PM)**
Strain background	**C57BL/6JGpt**

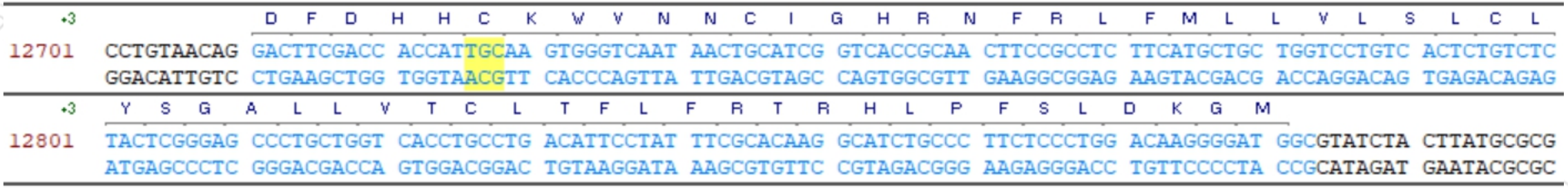
Technical Description

- The mouse *Zdhhc19* gene has 5 transcripts.
- According to the structure of *Zdhhc19* gene and requirements of customer, this project produced *Zdhhc19*-C142S point mutation on exon5 of the transcript of *Zdhhc19*-201(ENSMUST00000064192.8, NM_199309.2). The 142th amino acids will be mutated from C to S, and the corresponding codon will be mutated to AGC by the TGC.
- The mouse *Zdhhc19*-201 transcript contains 9 exons. The translation initiation site ATG is located at exon2, and the translation termination site TAG is located at exon9, encoding 347aa.
- In this project, *Zdhhc19* gene will be modified by CRISPR/Cas9 technology. The brief process is as follows: In vitro, sgRNA and donor vectors were constructed. Cas9, sgRNA and donor were injected into the fertilized eggs of C57BL/6JGpt mice for homologous recombination, and obtained positive F0 mice identified by PCR and sequencing analysis. The stable inheritable positive F1 mice model was obtained by mating F0 mice with C57BL/6JGpt mice.

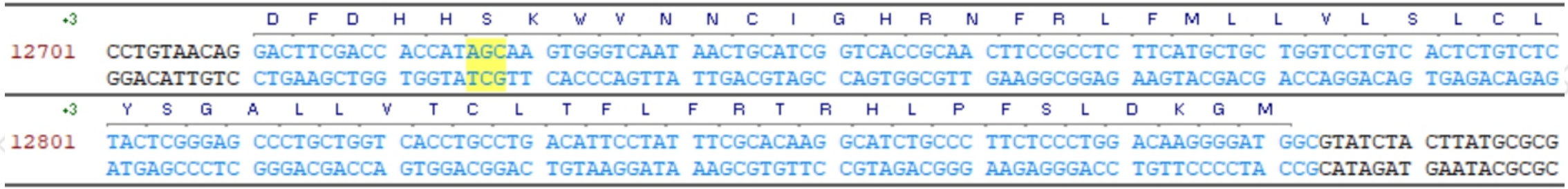
Targeted Mutation Site

集萃药康 GemPharmatech

Before mutation



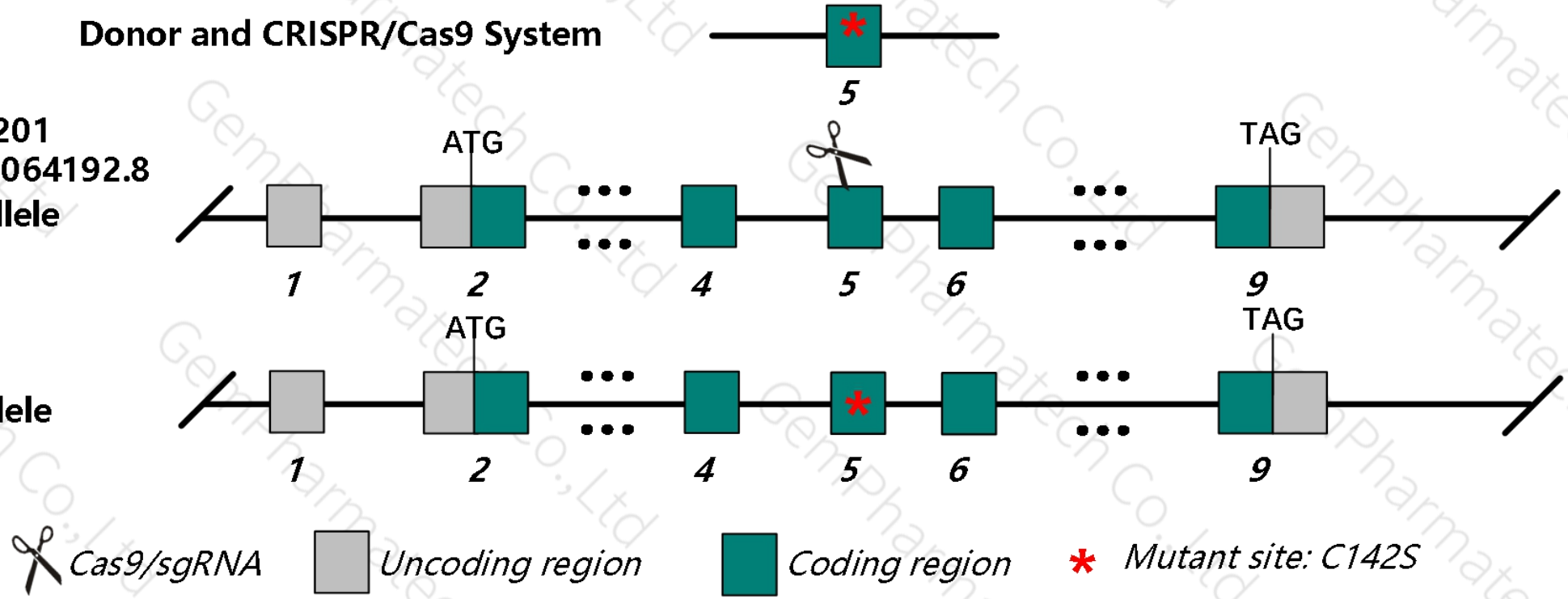
After mutation



The blue region is exon5 of *Zdhhc19-201,* the yellow region represents the targeted mutation site.

Strategy

This model uses CRISPR/Cas9 technology to edit the *Zdhhc19* gene and the schematic diagram is as follow:



Notice

- One or Two synonymous mutations of amino acids will be intronduced on exon5 of *Zdhhc19*.

- Mouse *Zdhhc19* gene is located on Chr16. Please take the loci in consideration when breeding this mutation mice with other gene modified strains, if the other gene is also on Chr16, it may be extremely hard to get double gene positive homozygotes.

- The scheme is designed according to the genetic information in the existing database. Due to the complex process of gene transcription and translation, it cannot be predicted completely at the present technology level.

Gene name and location (NCBI)

Zdhhc19 zinc finger, DHHC domain containing 19 [*Mus musculus* (house mouse)]

Download Datasets

Gene ID: 245308, updated on 17-Dec-2020

Summary

Official Symbol	Zdhhc19 provided by MGI
Official Full Name	zinc finger, DHHC domain containing 19 provided by MGI
Primary source	MGI:MGI:2682948
See related	Ensembl:ENSMUSG00000052363
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	Gm616; Gm1744
Expression	Restricted expression toward testis adult (RPKM 76.6) See more
Orthologs	human all

NEW **Try the new Gene table**

Try the new Transcript table

Genomic context

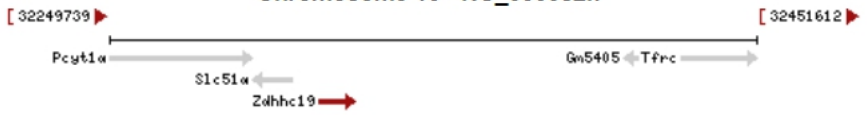
Location: 16; 16 B3

See Zdhhc19 in Genome Data Viewer

Exon count: 12

Annotation release	Status	Assembly	Chr	Location
109	current	GRCm39 (GCF_000001635.27)	16	NC_000082.7 (32315059..32326032)
108.20200622	previous assembly	GRCm38.p6 (GCF_000001635.26)	16	NC_000082.6 (32496241..32507214)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	16	NC_000082.5 (32496367..32507300)

Chromosome 16 - NC_000082.7

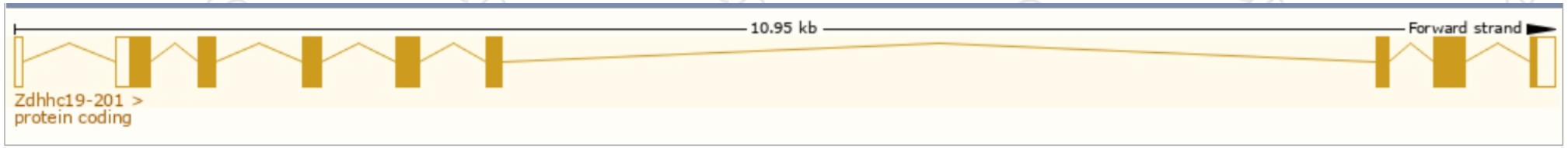


Transcript information （Ensembl）

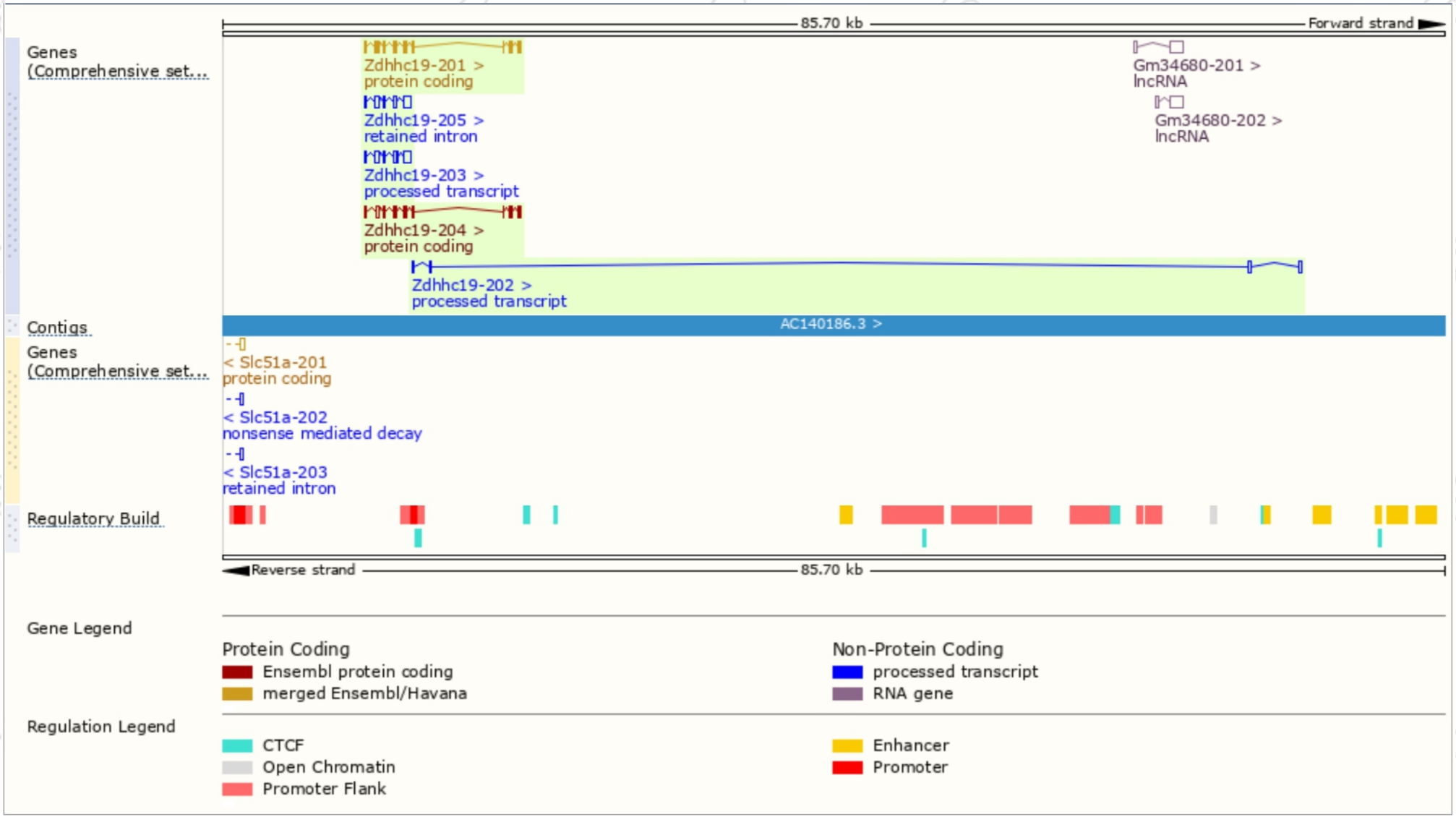
The gene has 5 transcripts, and all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt Match	Flags
Zdhhc19-201	ENSMUST00000064192.8	1323	347aa	Protein coding	CCDS28122	Q810M5	TSL:1 GENCODE basic APPRIS P2
Zdhhc19-204	ENSMUST00000231510.2	1181	251aa	Protein coding	-	A0A338P7I3	GENCODE basic APPRIS ALT2
Zdhhc19-203	ENSMUST00000231293.2	1098	No protein	Processed transcript	-	-	-
Zdhhc19-202	ENSMUST00000160832.2	631	No protein	Processed transcript	-	-	TSL:3
Zdhhc19-205	ENSMUST00000232434.2	1067	No protein	Retained intron	-	-	-

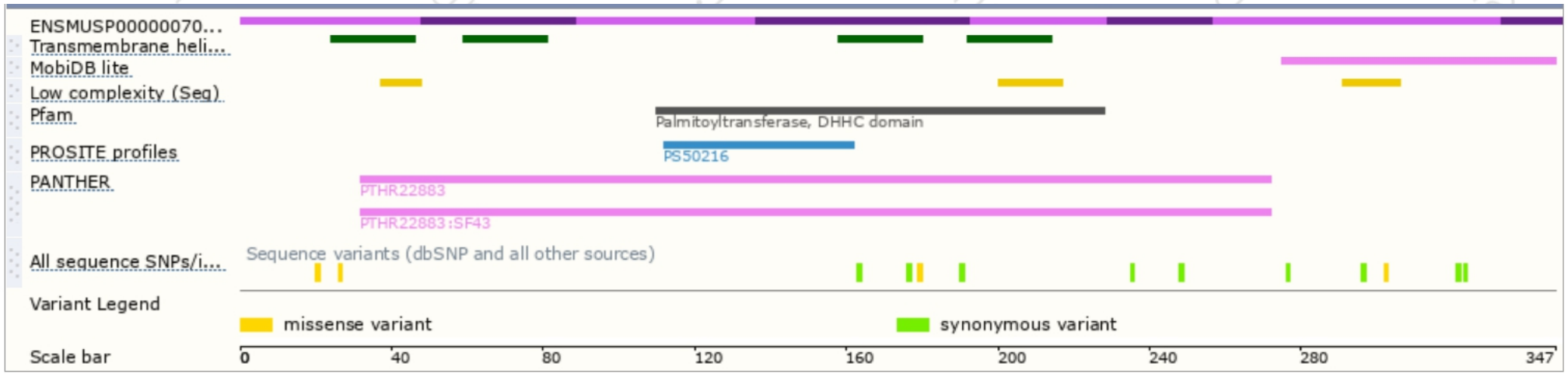
The strategy is based on the design of *Zdhhc19*-201 transcript, the transcription is shown below:



Genomic location distribution



Protein domain



If you have any questions, please feel free to contact us.
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