Fam83a Cas9-KO Strategy

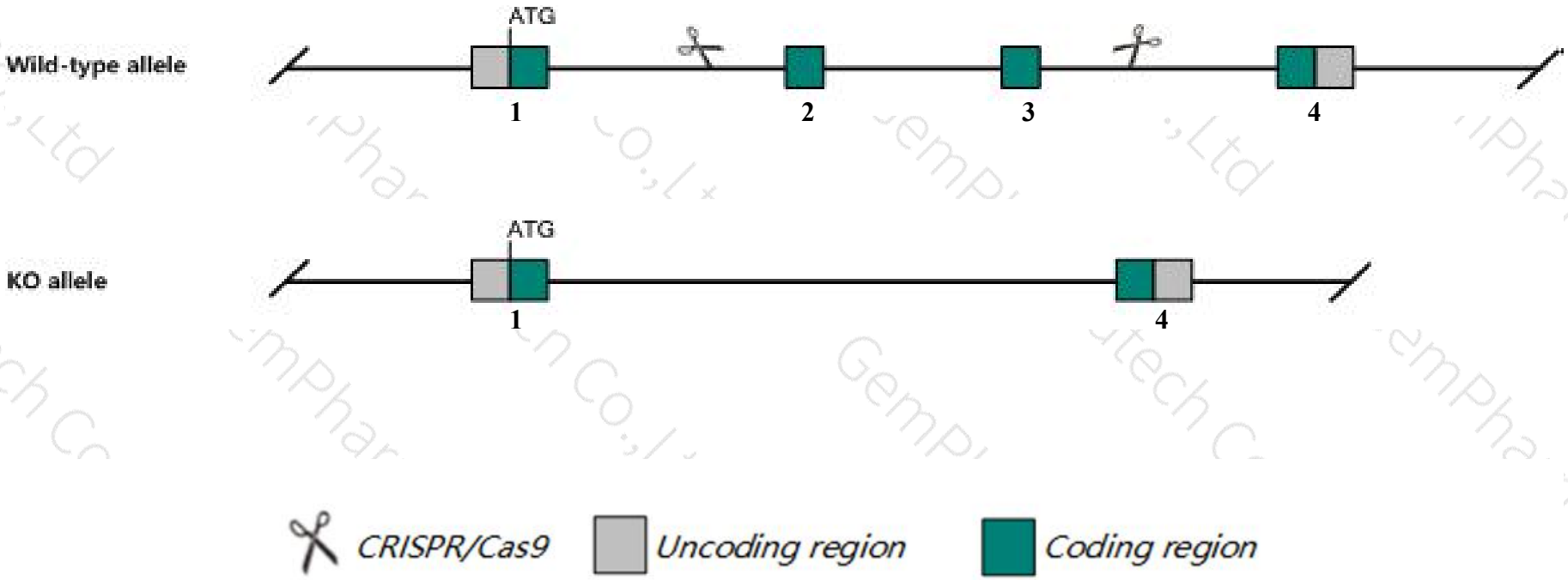
Designer:Xueting Zhang

Project Overview

Project Name	***Fam83a***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Fam83a* gene. The schematic diagram is as follows:



Technical routes

➢ The *Fam83a* gene has 3 transcripts. According to the structure of *Fam83a* gene, exon2-exon3 of *Fam83a-202* (ENSMUST00000160942.7) transcript is recommended as the knockout region.The region contains 293bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Fam83a* gene. The brief process is as follows: CRISPR/Cas9 syste

Notice

➢ The *Fam83a* gene is located on the Chr15. 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.

➢ Transcript *Fam83a*-203 may not be affected.

➢ The N-terminal of *Fam83a* gene will remain 160aa,it may remain the partial function of *Fam83a* 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）

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Fam83a family with sequence similarity 83, member A [Mus musculus (house mouse)]

Gene ID: 239463, updated on 31-Jan-2019

Summary

Official Symbol	Fam83a provided by MGI
Official Full Name	family with sequence similarity 83, member A provided by MGI
Primary source	MGI:MGI:2447773
See related	Ensembl:ENSMUSG00000051225
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
Expression	Biased expression in subcutaneous fat pad adult (RPKM 4.0), mammary gland adult (RPKM 2.7) and 11 other tissues See more
Orthologs	human all

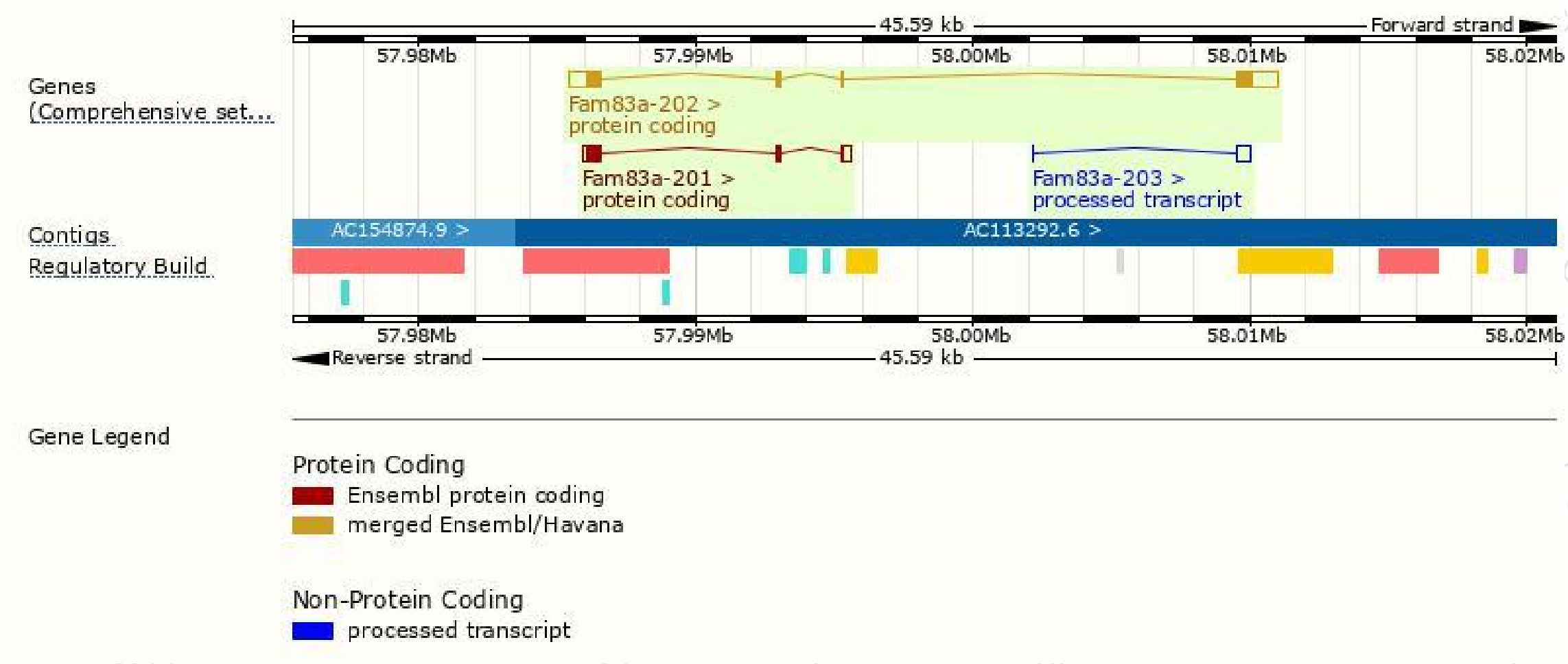
Transcript information（Ensembl）

The gene has 3 transcripts,all transcripts are shown below:

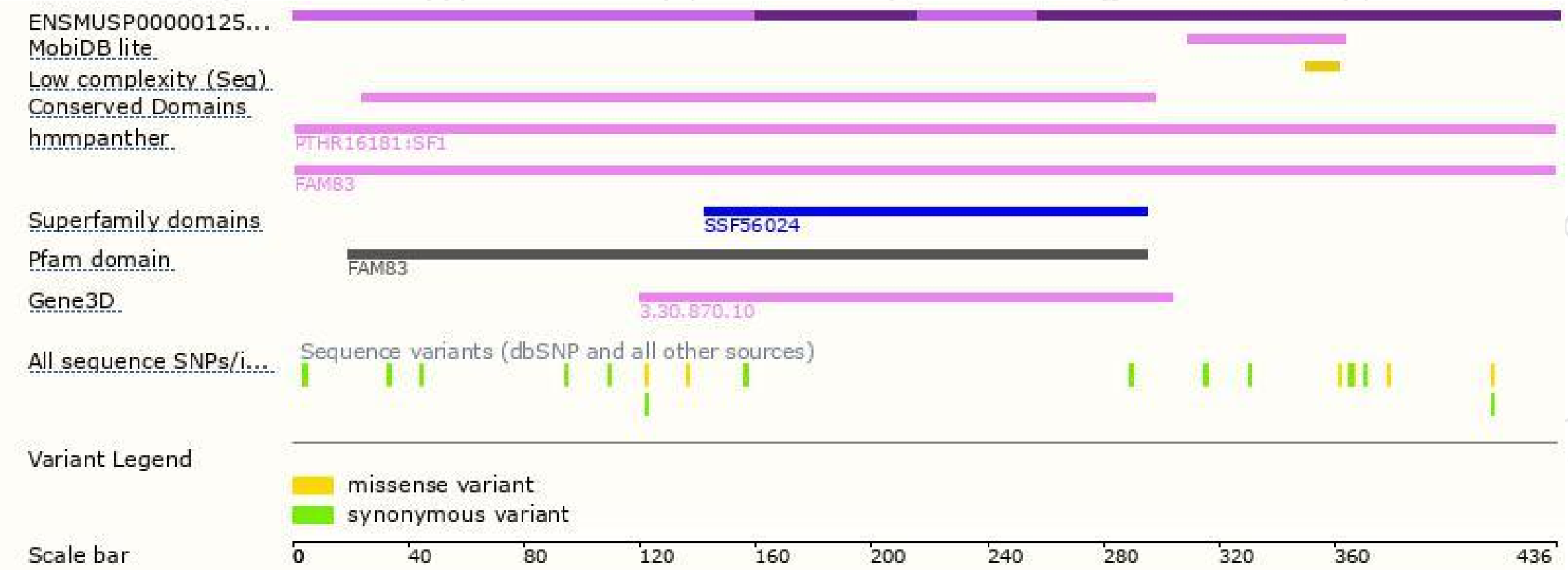
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Fam83a-202	ENSMUST00000160942.7	2876	436aa	Protein coding	CCDS27486	Q8K2P2	TSL:5 GENCODE basic APPRIS P1
Fam83a-201	ENSMUST00000050374.2	1189	258aa	Protein coding	-	Q8K2P2	TSL:1 GENCODE basic
Fam83a-203	ENSMUST00000161231.1	529	No protein	Processed transcript	-	-	TSL:5

The strategy is based on the design of *Fam83a-202* transcript,The transcription is shown below

Genomic location distribution



Protein domain



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

Tel: 400-9660890

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GemPharmatech Co.,Ltd