

Defb41 Cas9-KO Strategy

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Project Overview

Project Name

Defb41

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Defb41* gene. The schematic diagram is as follows:



- The *Defb41* gene has 2 transcripts. According to the structure of *Defb41* gene, exon1 of *Defb41-202* (ENSMUST00000097817.3) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Defb41* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, mice heterozygous for a knock-in allele do not exhibit any phenotypic abnormalities or fertility defects.
- The *Defb41* gene is located on the Chr1. 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)

Defb41 defensin beta 41 [Mus musculus (house mouse)]

Gene ID: 77673, updated on 13-Mar-2020

Summary



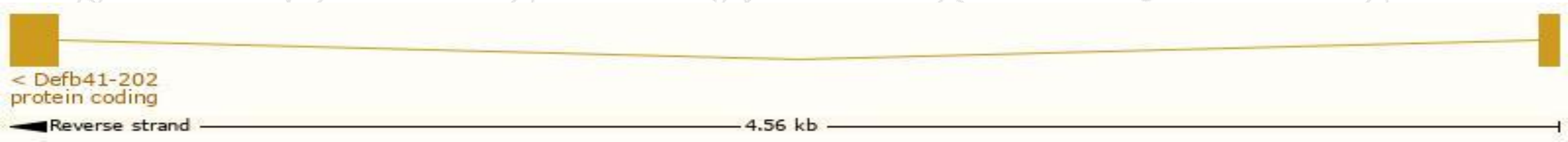
Official Symbol	Defb41 provided by MGI
Official Full Name	defensin beta 41 provided by MGI
Primary source	MGI:MGI:1924923
See related	Ensembl:ENSMUSG00000067773
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9230102D03Rik, BD-17, Bd-41, Defb16, Defb17, Gm15386
Expression	Restricted expression toward genital fat pad adult (RPKM 40.0) See more
Orthologs	human all

Transcript information (Ensembl)

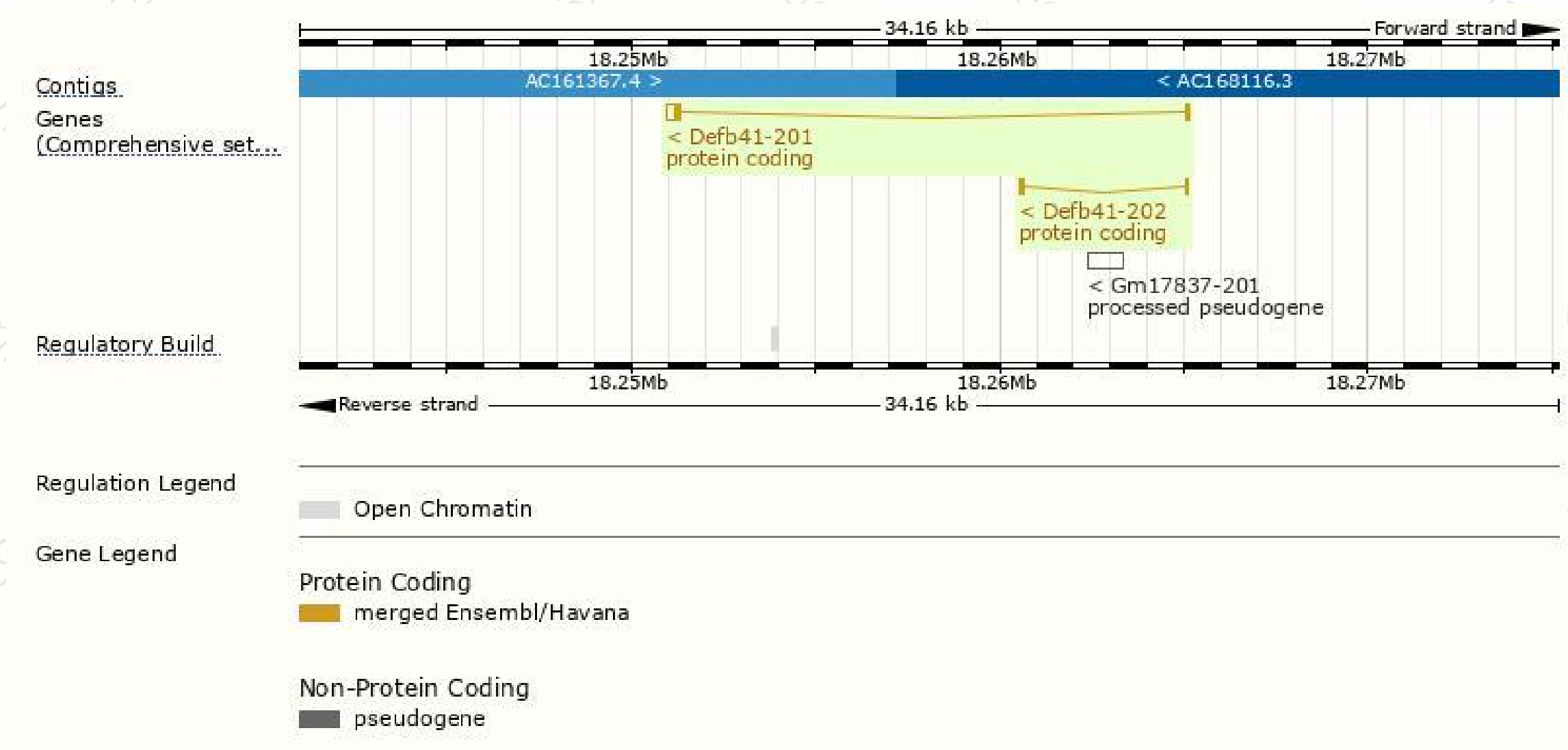
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Defb41-201	ENSMUST00000088463.1	467	62aa	Protein coding	CCDS48226	Q30KP6	TSL:1 GENCODE basic
Defb41-202	ENSMUST00000097817.3	198	65aa	Protein coding	CCDS35521	Q30KP6	TSL:1 GENCODE basic APPRIS P1

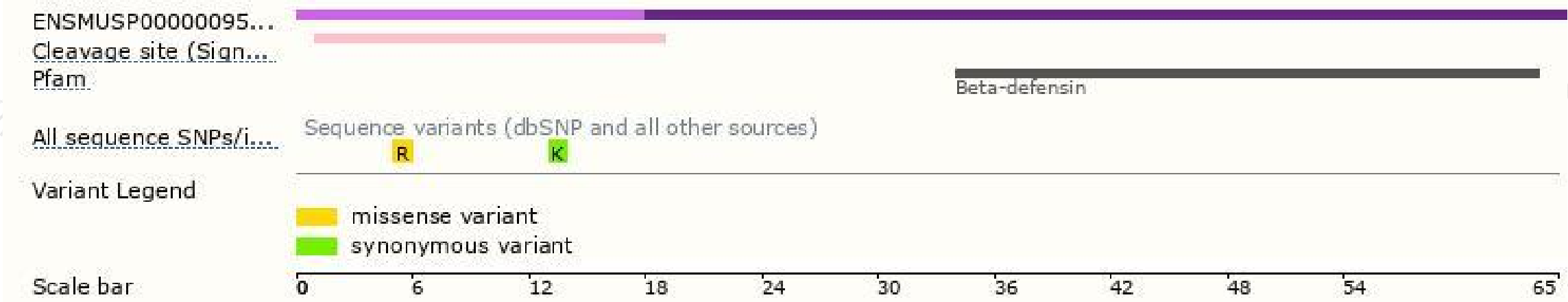
The strategy is based on the design of *Defb41-202* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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