

Krt25 Cas9-KO Strategy

Designer:

Yanhua Shen

Reviewer:

Xueting Zhang

Design Date:

2020-01-31

Project Overview

Project Name

Krt25

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Krt25* gene. The schematic diagram is as follows:



- The *Krt25* gene has 1 transcript. According to the structure of *Krt25* gene, exon1-exon8 of *Krt25-201* (ENSMUST00000038004.2) transcript is recommended as the knockout region. The region contains all of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Krt25* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mutations in this gene have a defect in hair formation resulting in a wavy coat and curly vibrissae. Some alleles may compromise normal growth.
- The *Krt25* gene is located on the Chr11. 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)

Krt25 keratin 25 [*Mus musculus* (house mouse)]

Gene ID: 70810, updated on 21-Jan-2020

Summary

Official Symbol	Krt25 provided by MGI
Official Full Name	keratin 25 provided by MGI
Primary source	MGI:MGI:1918060
See related	Ensembl:ENSMUSG00000035831
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	K25; Ka38; CK-25; Krt25a; mIRSa1; 4631426H08Rik
Expression	Biased expression in cerebellum adult (RPKM 1.3) and placenta adult (RPKM 0.3) See more
Orthologs	human all

Genomic context

Location: 11; 11 D

Exon count: 9

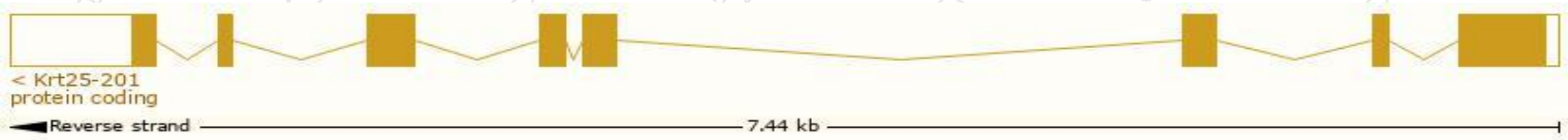
See Krt25 in [Genome Data Viewer](#)

Transcript information (Ensembl)

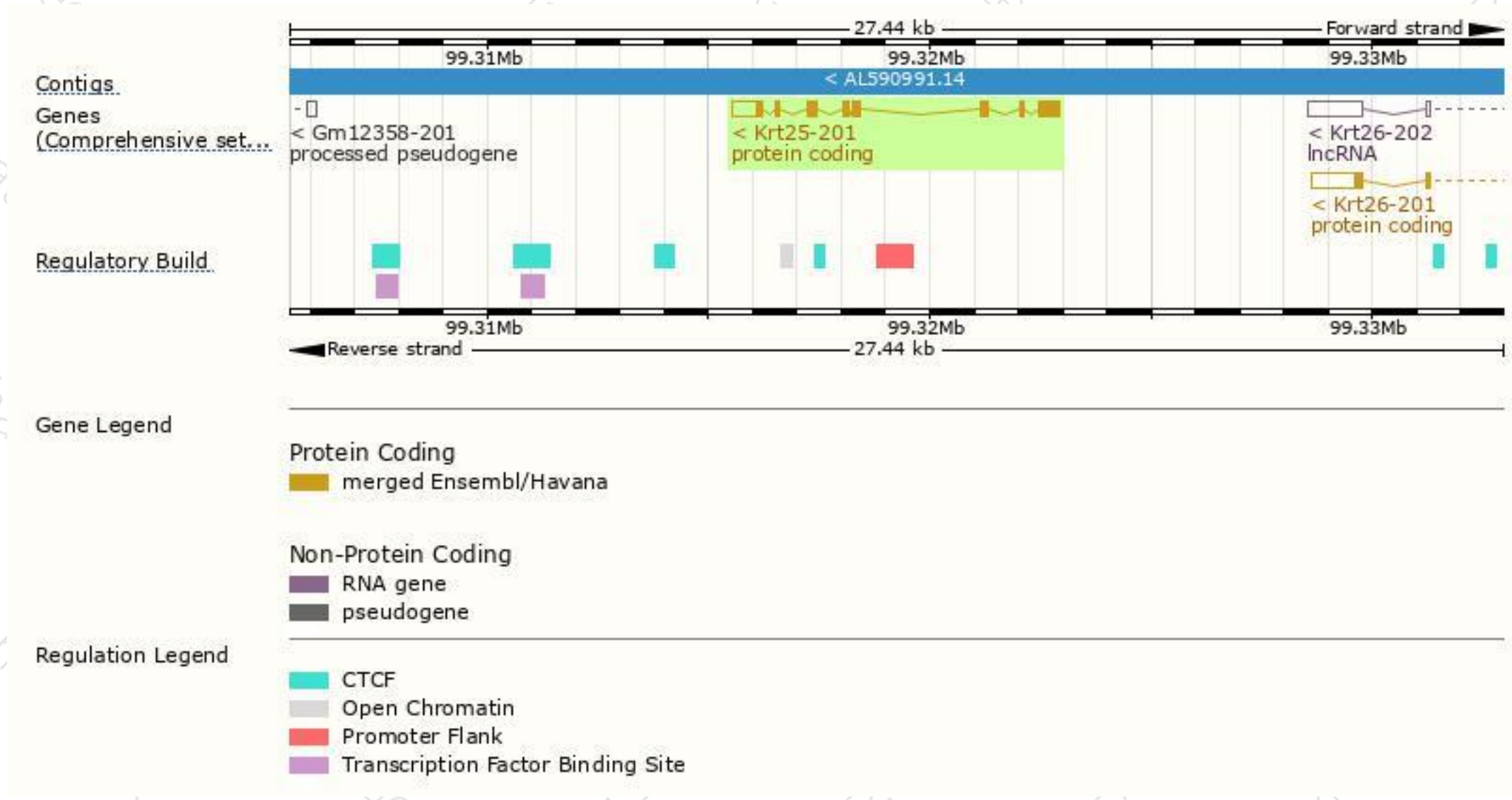
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Krt25-201	ENSMUST00000038004.2	1989	446aa	Protein coding	CCDS25377	Q8VCW2	TSL:1 GENCODE basic APPRIS P1

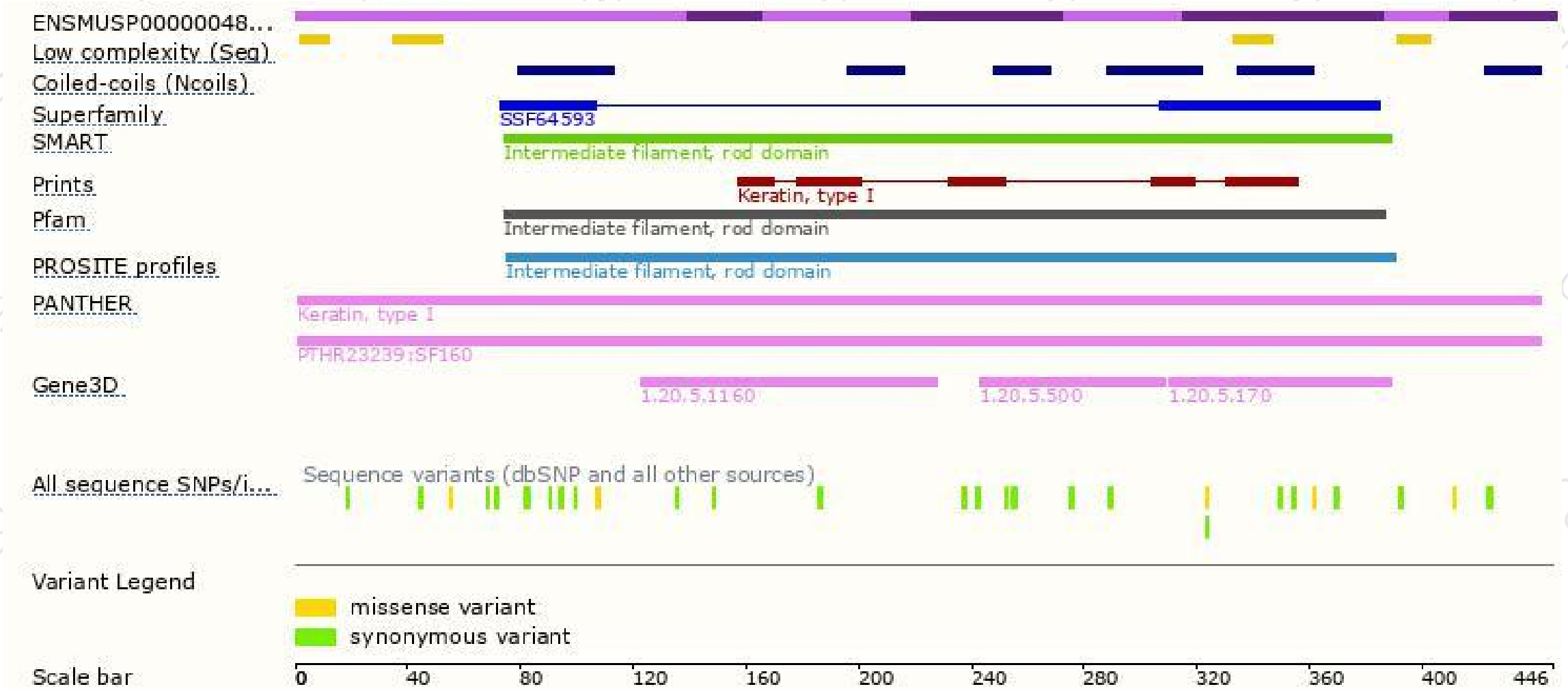
The strategy is based on the design of *Krt25-201* transcript, The transcription is shown below



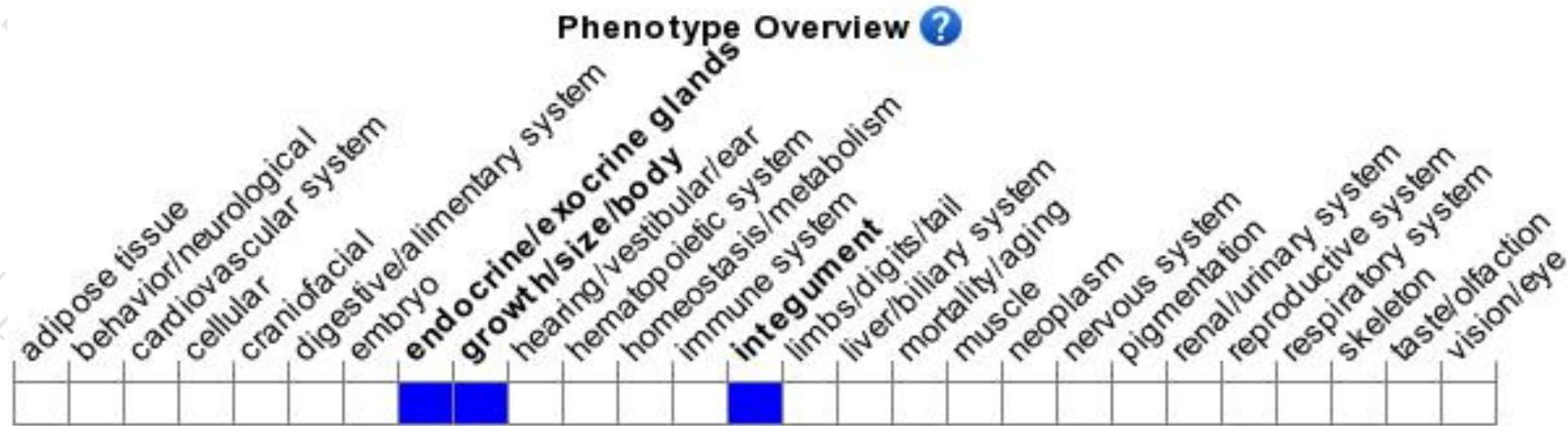
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

According to the existing MGI data, Mutations in this gene have a defect in hair formation resulting in a wavy coat and curly vibrissae. Some alleles may compromise normal growth.

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

Tel: 400-9660890

