

***Krt23* Cas9-KO Strategy**

Designer: Xiaojing Li

Reviewer: Jia Yu

Design Date: 2021-1-8

Project Overview

Project Name

Krt23

Project type

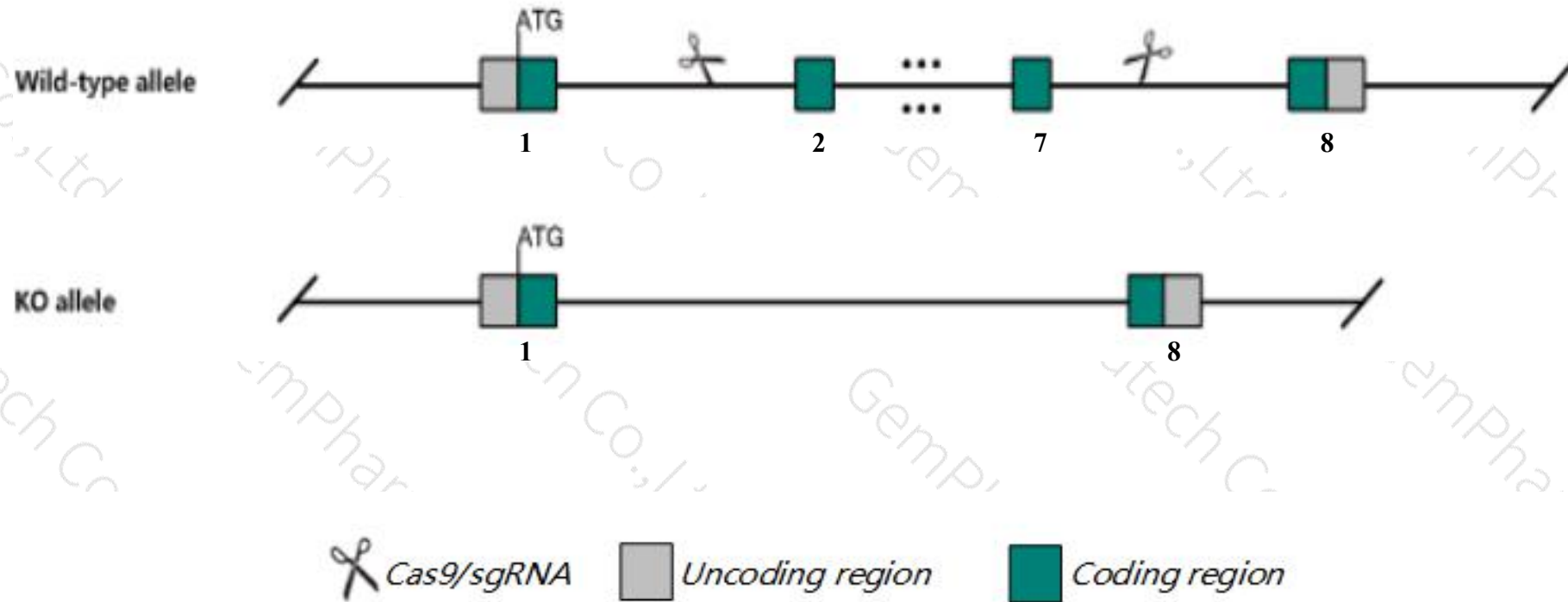
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Krt23* gene. The schematic diagram is as follows:



- The *Krt23* gene has 1 transcript. According to the structure of *Krt23* gene, exon2-exon7 of *Krt23-201*(ENSMUST00000006969.7) transcript is recommended as the knockout region. The region contains 778bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Krt23* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6JGpt mice. Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.

- The *Krt23* 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)

Krt23 keratin 23 [Mus musculus (house mouse)]

Gene ID: 94179, updated on 13-Mar-2020

Summary



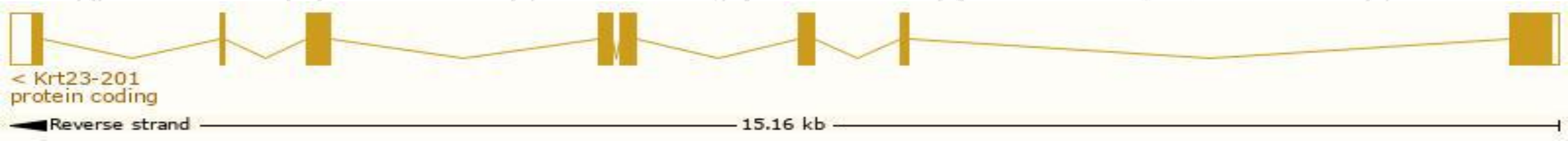
Official Symbol	Krt23 provided by MGI
Official Full Name	keratin 23 provided by MGI
Primary source	MGI:MGI:2148866
See related	Ensembl:ENSMUSG00000006777
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	CK23, Haik1, K23, Krt1-23
Expression	Biased expression in stomach adult (RPKM 66.7), lung adult (RPKM 10.0) and 2 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

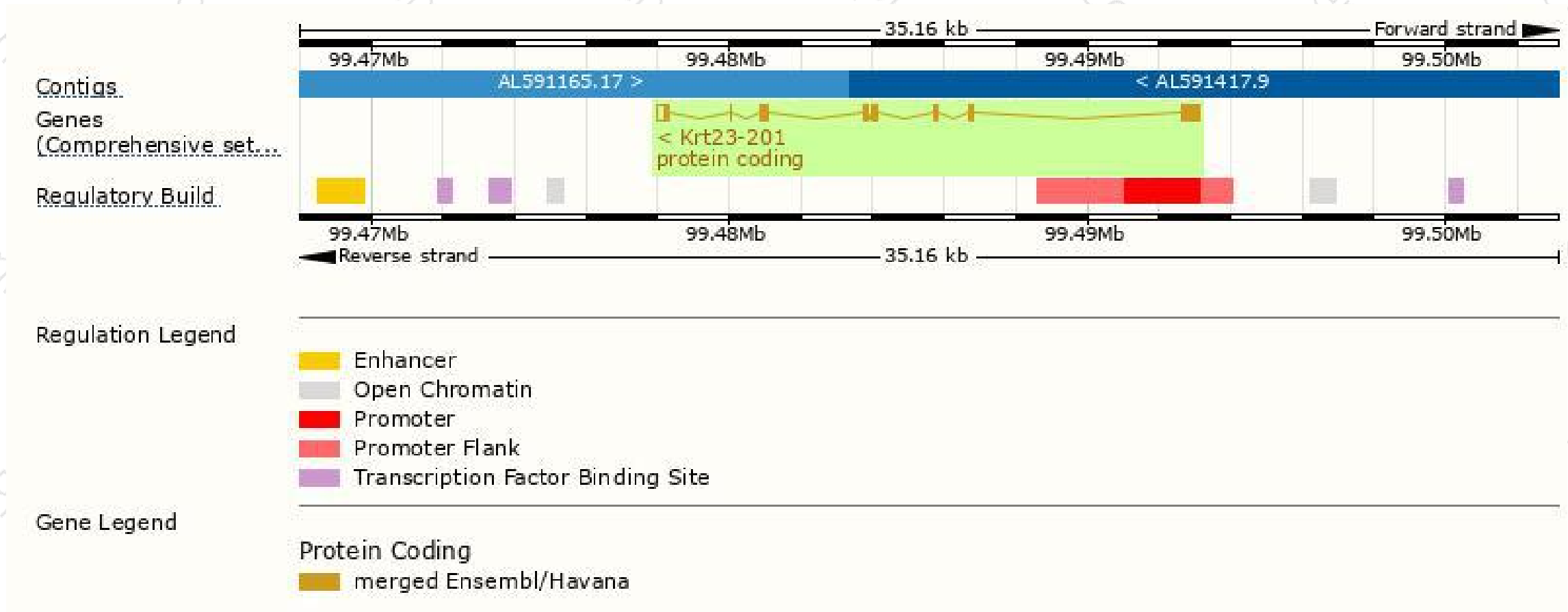
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Krt23-201	ENSMUST00000006969.7	1565	422aa	Protein coding	CCDS25382	Q544I8 Q99PS0	TSL:1 GENCODE basic APPRIS P1

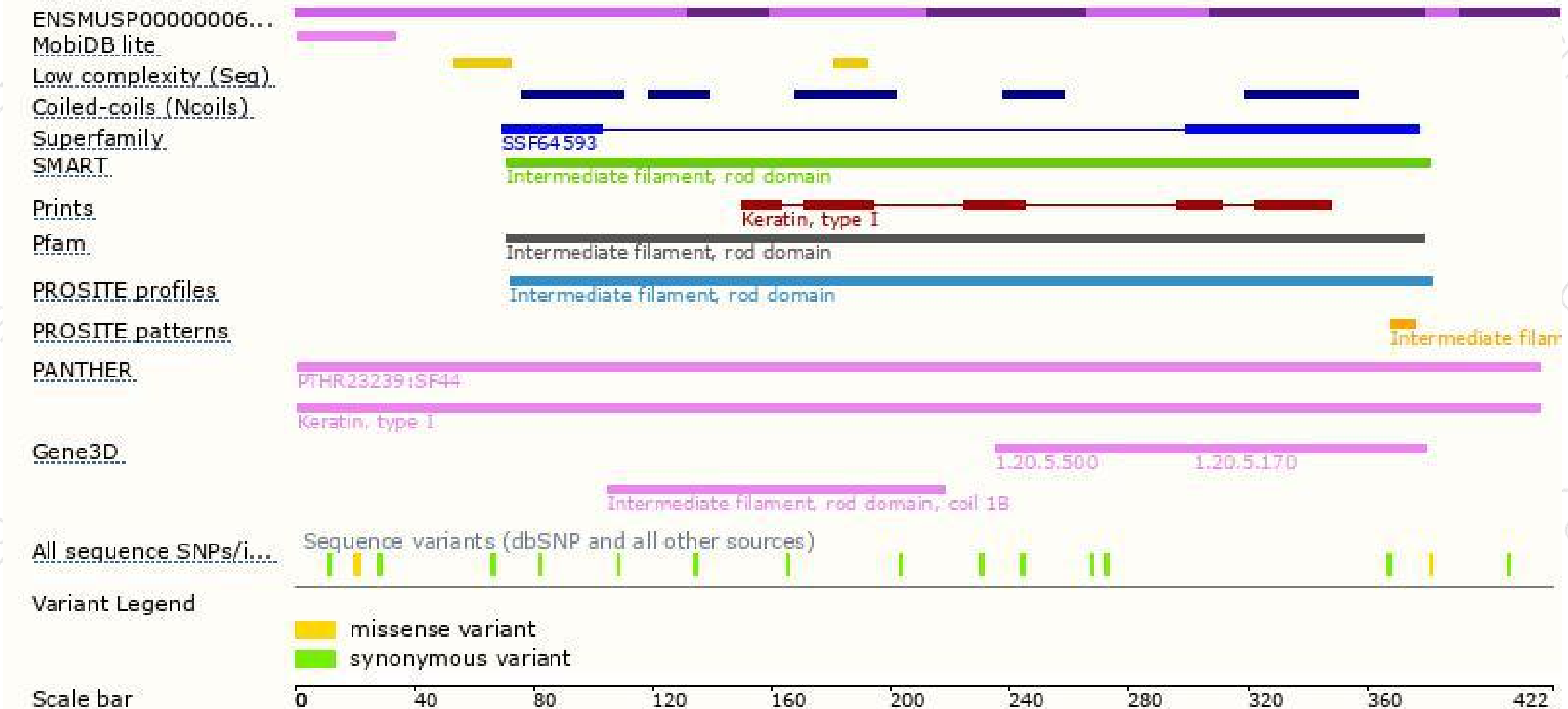
The strategy is based on the design of *Krt23-201* transcript, the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 025-5864 1534

