

Polr3e Cas9-KO Strategy

Designer: Daohua Xu

Reviewer: Huimin Su

Design Date: 2020-4-15

Project Overview

Project Name

Polr3e

Project type

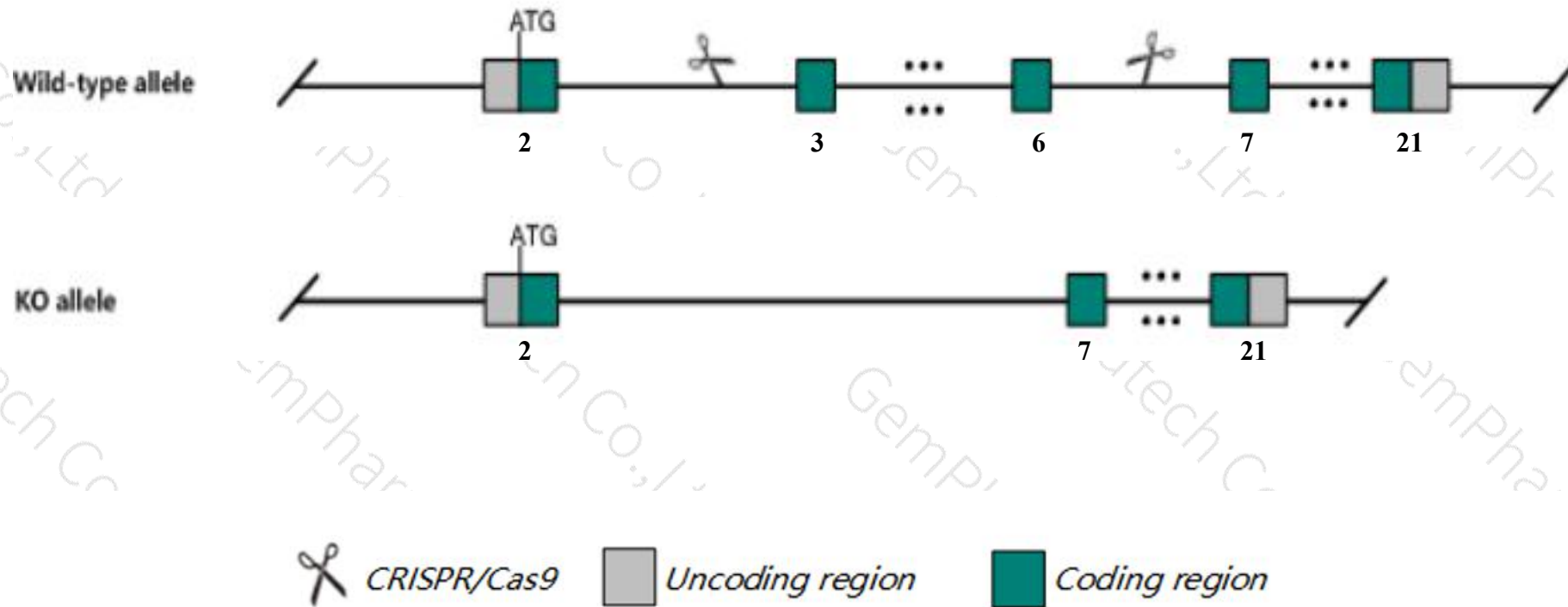
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Polr3e* gene. The schematic diagram is as follows:



- The *Polr3e* gene has 4 transcripts. According to the structure of *Polr3e* gene, exon3-exon6 of *Polr3e-201* (ENSMUST00000033173.14) transcript is recommended as the knockout region. The region contains 328bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Polr3e* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Polr3e* gene is located on the Chr7. 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)

Polr3e polymerase (RNA) III (DNA directed) polypeptide E [Mus musculus (house mouse)]

Gene ID: 26939, updated on 13-Mar-2020

Summary



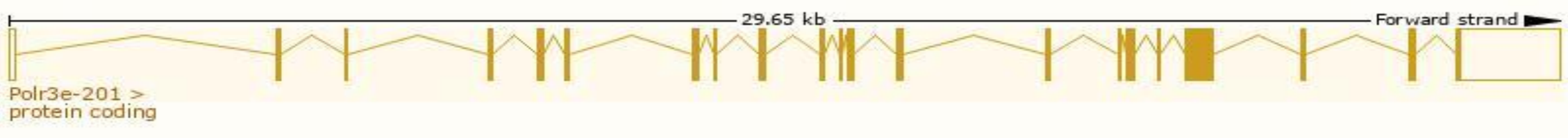
Official Symbol	Polr3e provided by MGI
Official Full Name	polymerase (RNA) III (DNA directed) polypeptide E provided by MGI
Primary source	MGI:MGI:1349452
See related	Ensembl:ENSMUSG00000030880
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	RPC5, Sin
Expression	Ubiquitous expression in kidney adult (RPKM 10.6), limb E14.5 (RPKM 10.5) and 28 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

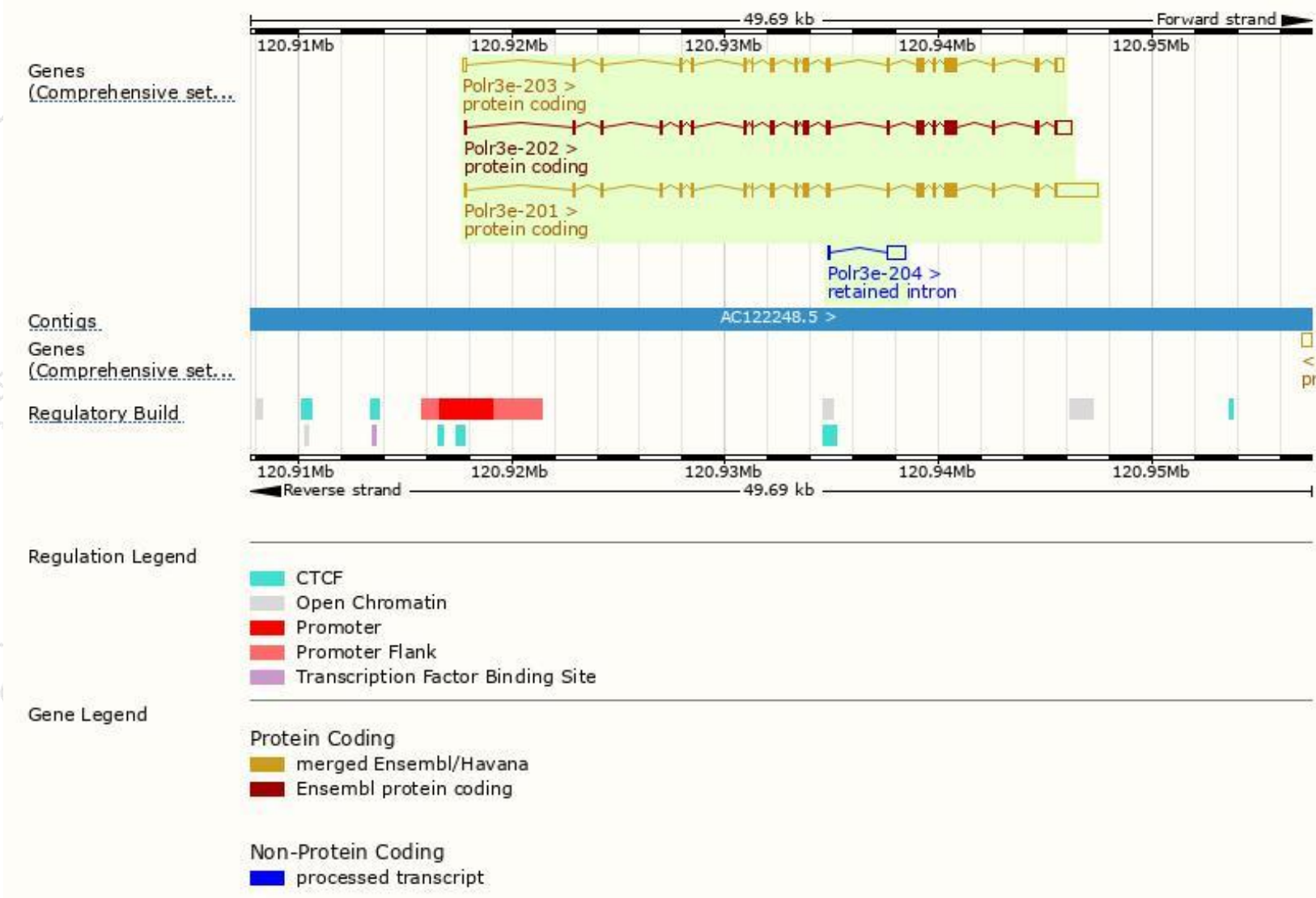
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Polr3e-201	ENSMUST00000033173.14	4194	710aa	Protein coding	CCDS21797	Q9CZT4	TSL:1 GENCODE basic APPRIS is a system to annotate alternatively spliced transcripts based on a range of computational methods to identify the most functionally important transcript(s) of a gene. APPRIS P1
Polr3e-202	ENSMUST00000106483.3	3001	710aa	Protein coding	CCDS21797	Q9CZT4	TSL:5 GENCODE basic APPRIS is a system to annotate alternatively spliced transcripts based on a range of computational methods to identify the most functionally important transcript(s) of a gene. APPRIS P1
Polr3e-203	ENSMUST00000207481.1	2545	684aa	Protein coding	CCDS52383	Q9CZT4	TSL:1 GENCODE basic
Polr3e-204	ENSMUST00000209014.1	936	No protein	Retained intron	-	-	TSL:3

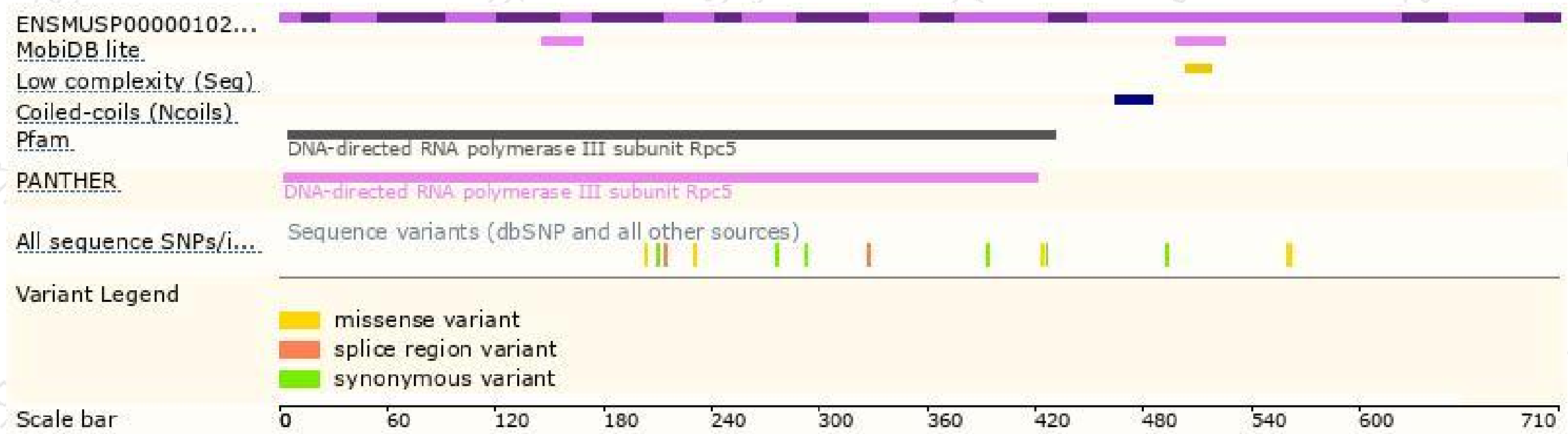
The strategy is based on the design of *Polr3e-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 400-9660890

