Kctd19 Cas9-KO Strategy

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Reviewer: Xueting Zhang

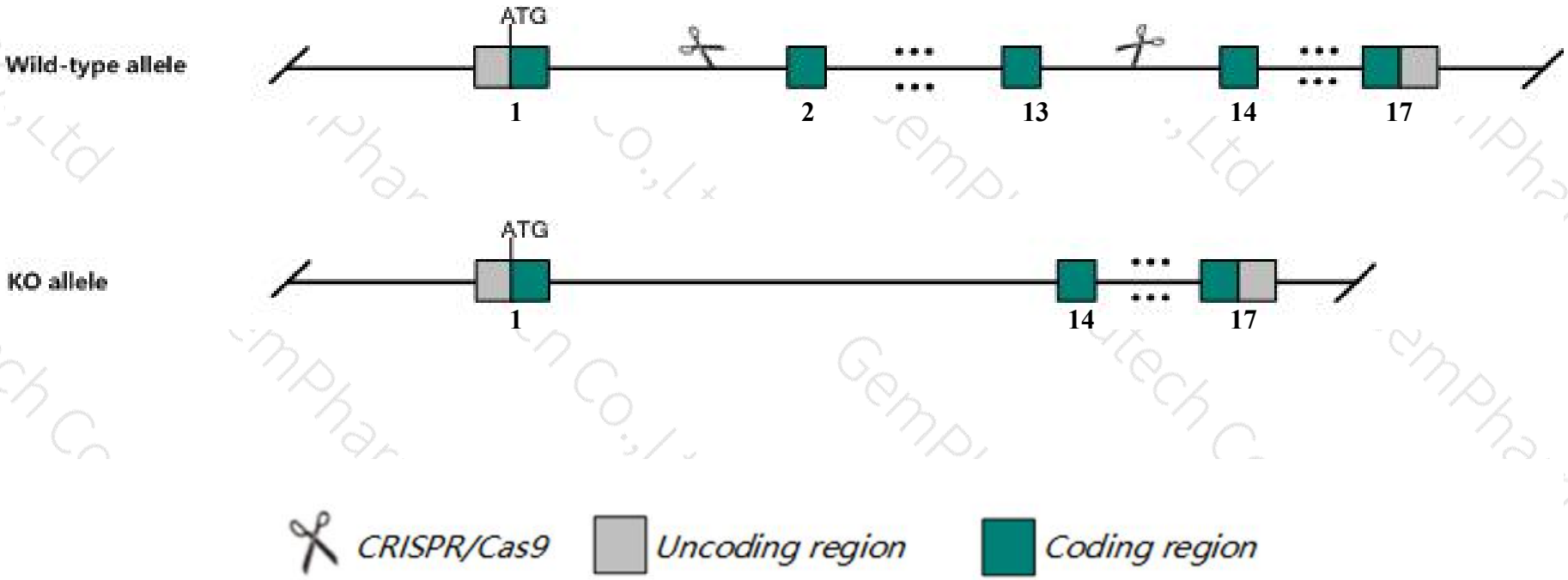
Design Date: 2019-10-17

Project Overview

Project Name	***Kctd19***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Kctd19* gene. The schematic diagram is as follows:



Technical routes

➢ The *Kctd19* gene has 4 transcripts. According to the structure of *Kctd19* gene, exon2-exon13 of *Kctd19-201* (ENSMUST00000063071.12) transcript is recommended as the knockout region.The region contains 2287bp coding sequenc Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Kctd19* gene. The brief process is as follows: CRISPR/Cas9 systen

Notice

➢The transcript of 203 is incomplete and effects are unknown.

➢The *Kctd19* gene is located on the Chr8. 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）

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Kctd19 potassium channel tetramerisation domain containing 19 [*Mus musculus* (house mouse)]

Gene ID: 279499, updated on 12-Aug-2019

Summary

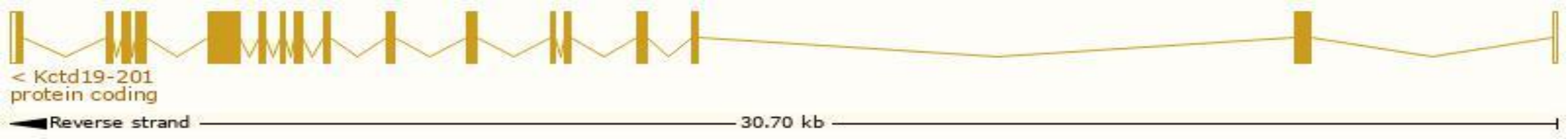
Official Symbol	Kctd19 provided by MGI
Official Full Name	potassium channel tetramerisation domain containing 19 provided by MGI
Primary source	MGI:MGI:3045294
See related	Ensembl:ENSMUSG00000051648
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4922504H04Rik
Expression	Restricted expression toward testis adult (RPKM 76.8) See more
Orthologs	human all

Transcript information（Ensembl）

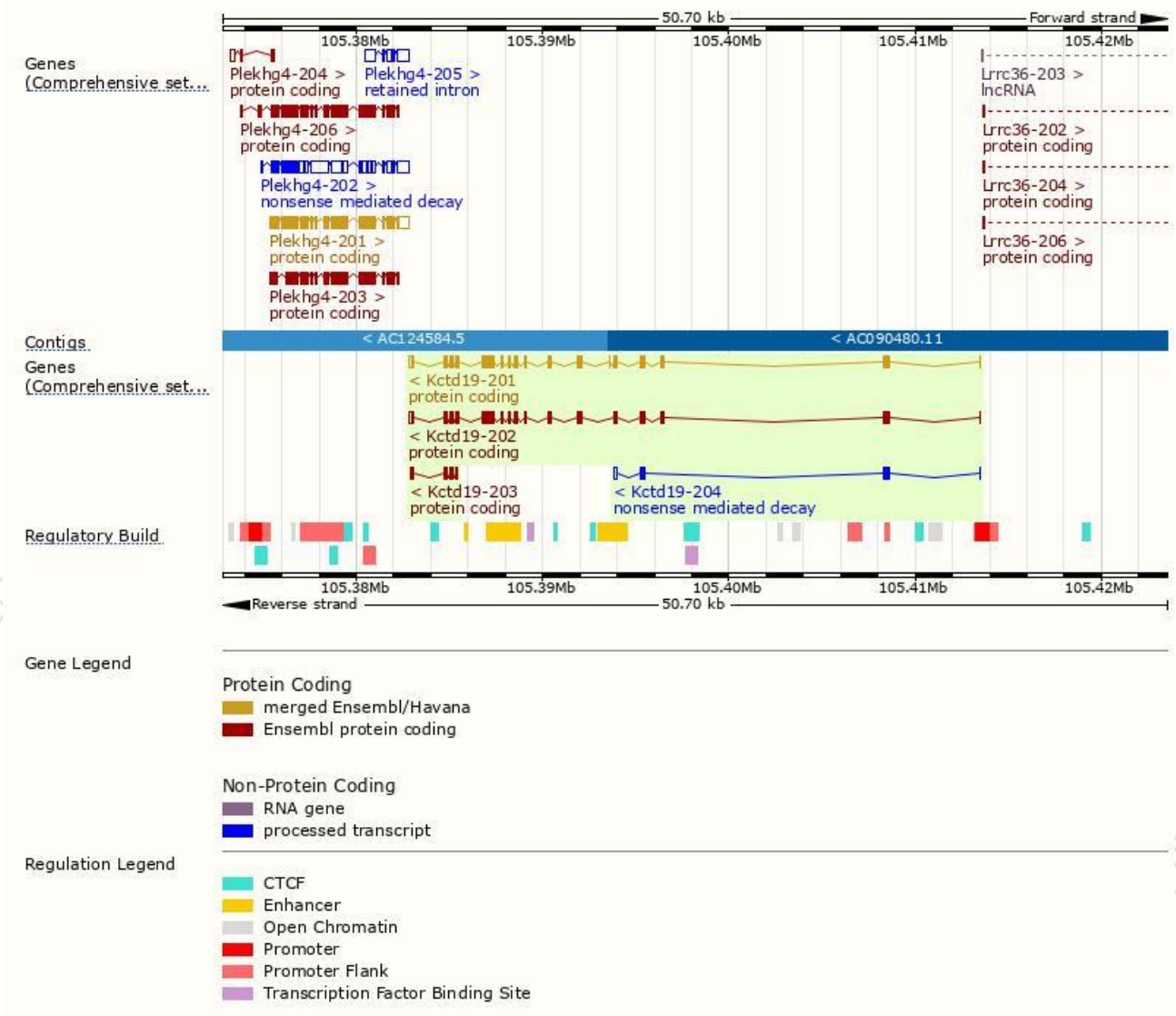
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Kctd19-201	ENSMUST00000063071.12	3048	950aa	Protein coding	CCDS40459	Q562E2	TSL:1 GENCODE basic
Kctd19-202	ENSMUST00000167294.7	2979	927aa	Protein coding	CCDS80922	Q562E2	TSL:1 GENCODE basic APPRIS P1
Kctd19-203	ENSMUST00000168196.1	450	150aa	Protein coding	-	F7CJT5	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete TSL:5
Kctd19-204	ENSMUST00000168868.1	624	137aa	Nonsense mediated decay	-	E9PVN1	TSL:5

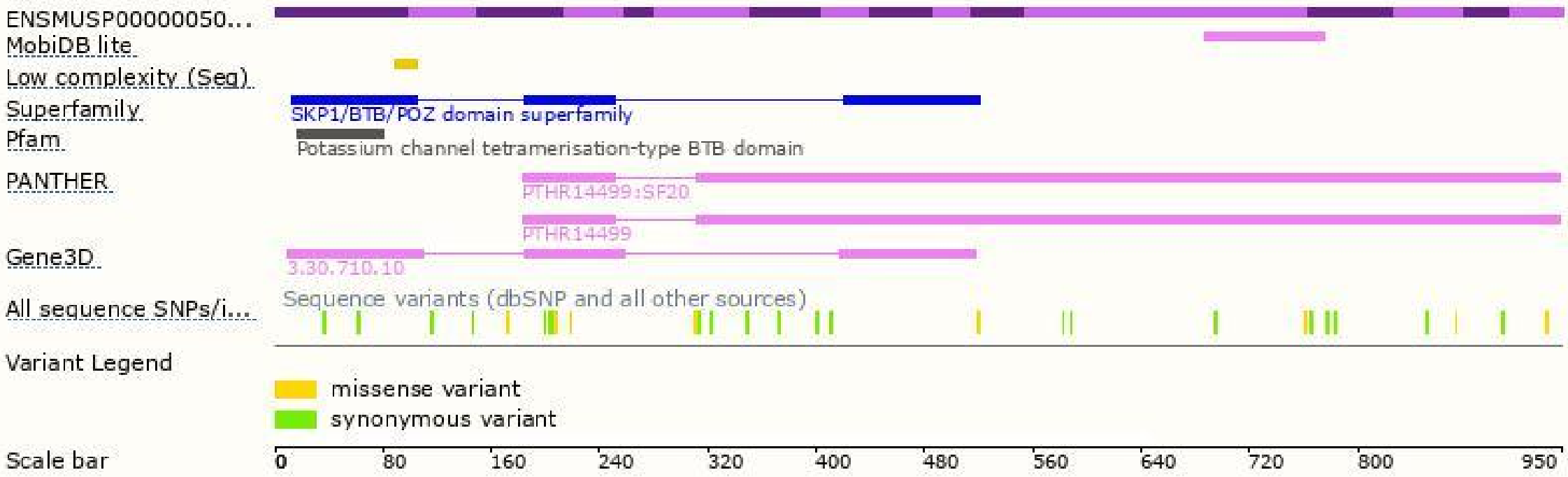
The strategy is based on the design of *Kctd19-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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