Kcnc1 Cas9-KO Strategy

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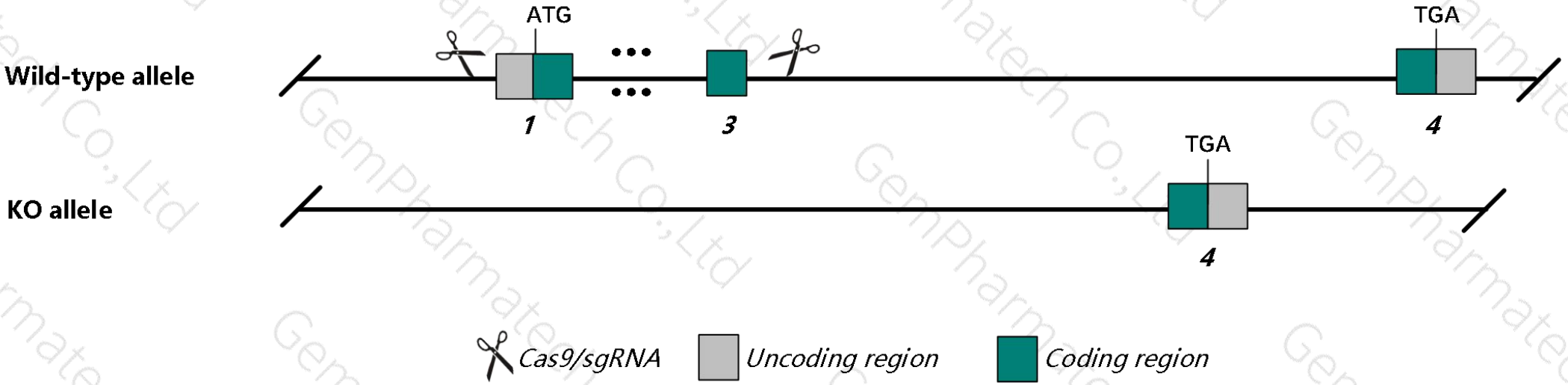
Project Overview

Project Name	***Kcnc1***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Kcnc1* gene. The schematic diagram is as follows:



Technical routes

➢ The *Kcnc1* gene has 3 transcripts. According to the structure of *Kcnc1* gene, exon1-exon3 of *Kcnc1-203* (ENSMUST00000160433.2) transcript is recommended as the knockout region.The region contains start code ATG 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 *Kcnc1* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

➢ The *Kcnc1* 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）

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Kcnc1 potassium voltage gated channel, Shaw-related subfamily, member 1 [Mus musculus (house mouse)]

Gene ID: 16502, updated on 19-Feb-2019

Summary

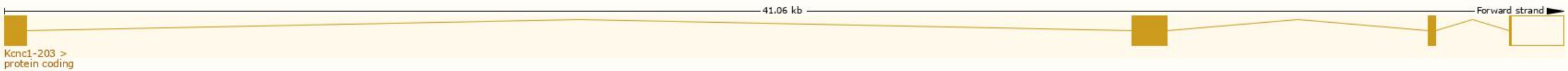
Official Symbol	Kcnc1 provided by MGI
Official Full Name	potassium voltage gated channel, Shaw-related subfamily, member 1 provided by MGI
Primary source	MGI:MGI:96667
See related	Ensembl:ENSMUSG00000058975
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	C230009H10Rik, KShIIIB, KV4, Kcr2-1, Kv3.1, NGK2, Shaw
Expression	Biased expression in cerebellum adult (RPKM 44.0), frontal lobe adult (RPKM 12.4) and 4 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

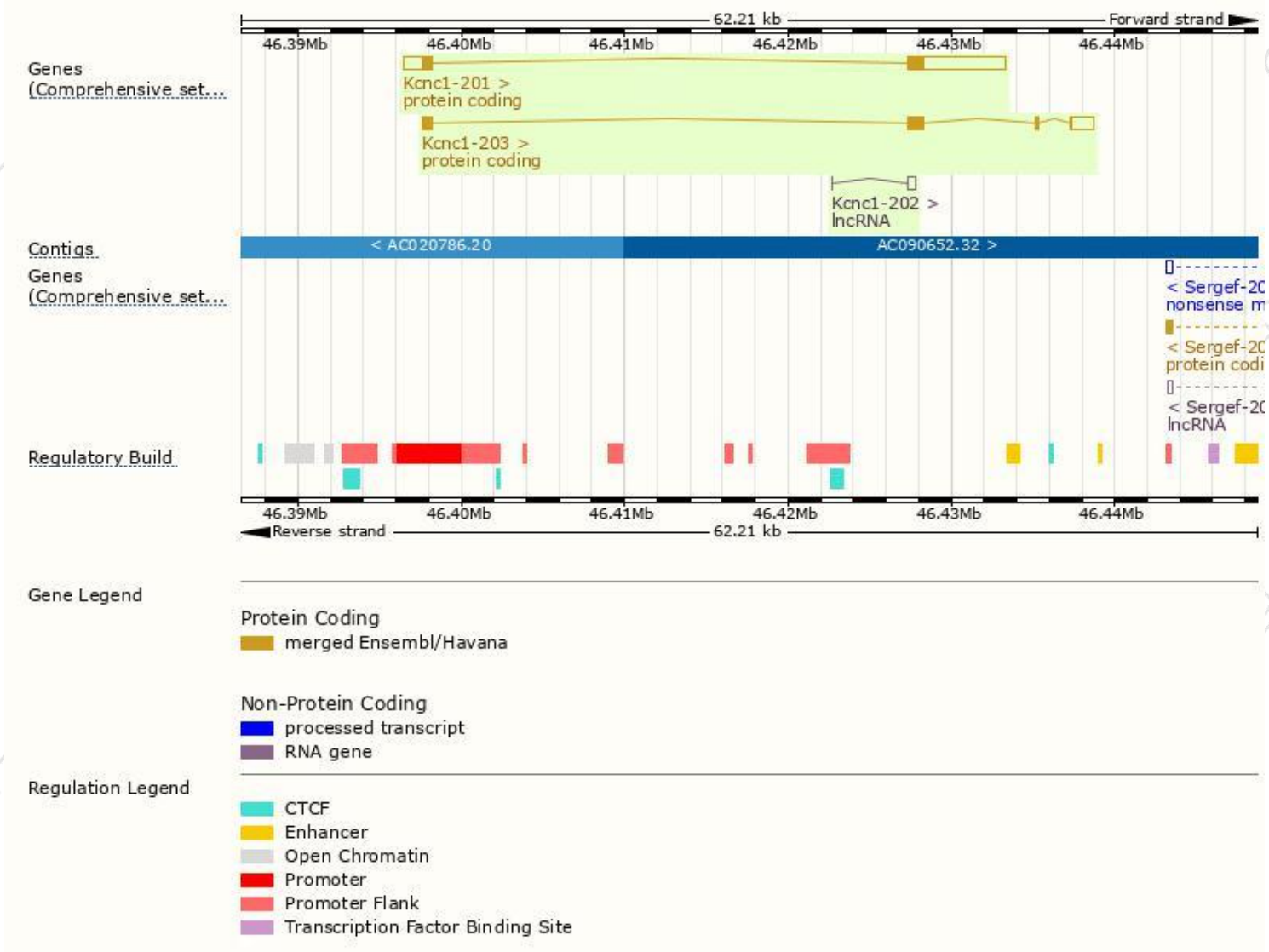
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Kcnc1-201	ENSMUST00000025202.7	7760	511aa	Protein coding	CCDS21278	P15388 Q3UHB6	TSL:1 GENCODE basic
Kcnc1-203	ENSMUST00000160433.2	3156	585aa	Protein coding	CCDS52252	P15388	TSL:1 GENCODE basic APPRIS P1
Kcnc1-202	ENSMUST00000160234.1	531	No protein	lncRNA	-	-	TSL:3

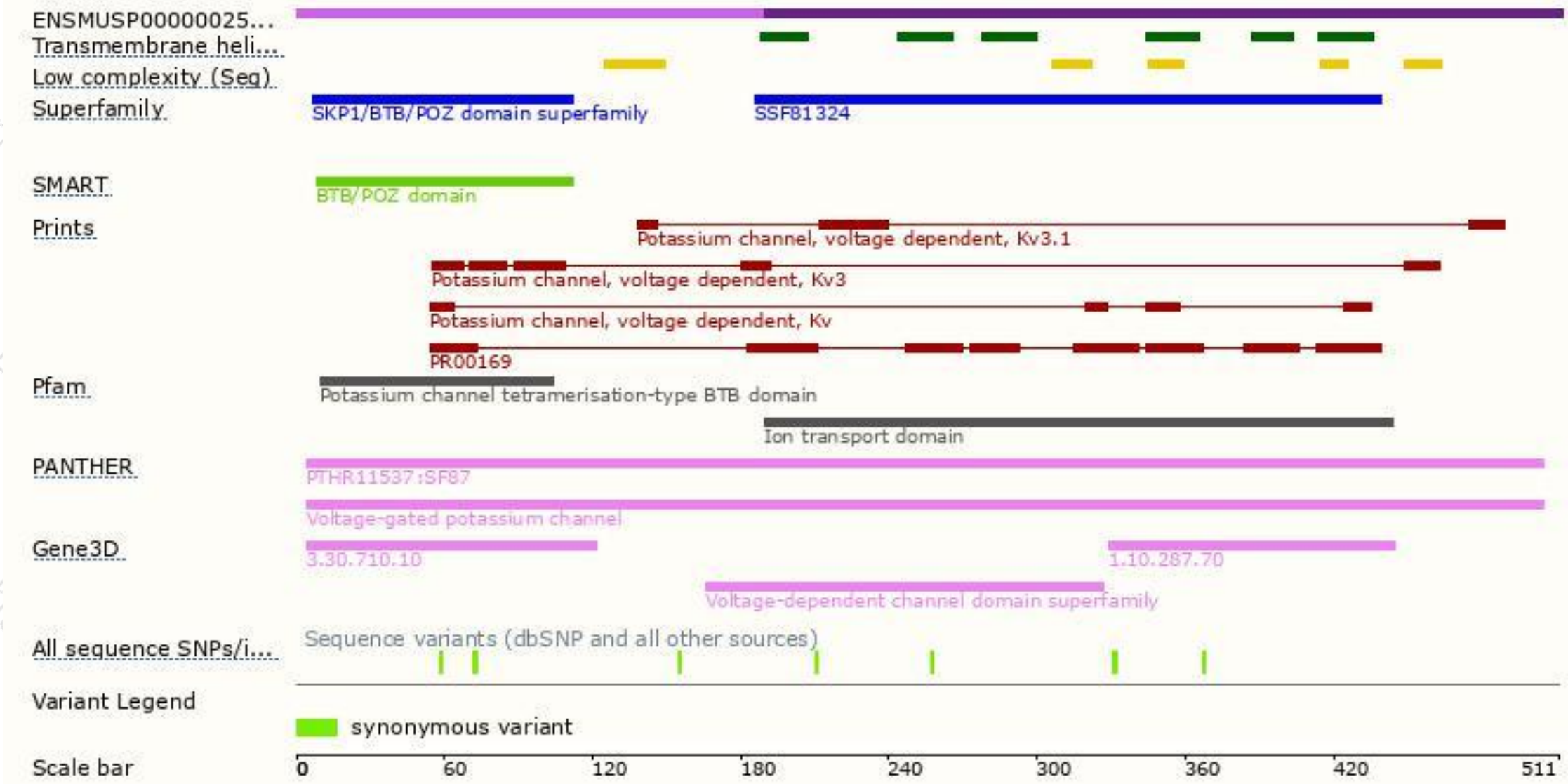
The strategy is based on the design of *Kcnc1-203* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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