

***Kcnc4* Cas9-KO Strategy**

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Project Overview

Project Name

Kcnc4

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Kcnc4* gene. The schematic diagram is as follows:



- The *Kcnc4* gene has 2 transcripts. According to the structure of *Kcnc4* gene, exon1-exon4 of *Kcnc4-201* (ENSMUST00000009617.9) 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 *Kcnc4* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Kcnc4* gene is located on the Chr3. 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)

Kcnc4 potassium voltage gated channel, Shaw-related subfamily, member 4 [*Mus musculus* (house mouse)]

Gene ID: 99738, updated on 12-Aug-2019

Summary

Official Symbol Kcnc4 provided by MGI
Official Full Name potassium voltage gated channel, Shaw-related subfamily, member 4 provided by MGI
Primary source MGI:MGI:96670
See related Ensembl:ENSMUSG00000027895
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 Kv3.4; Kcr2-4; KSHIIC; AI850292
Expression Biased expression in cortex adult (RPKM 11.1), cerebellum adult (RPKM 9.5) and 9 other tissues [See more](#)
Orthologs [human](#) [all](#)

Genomic context

Location: 3 F2.3; 3 46.83 cM

See Kcnc4 in [Genome Data Viewer](#)

Exon count: 4

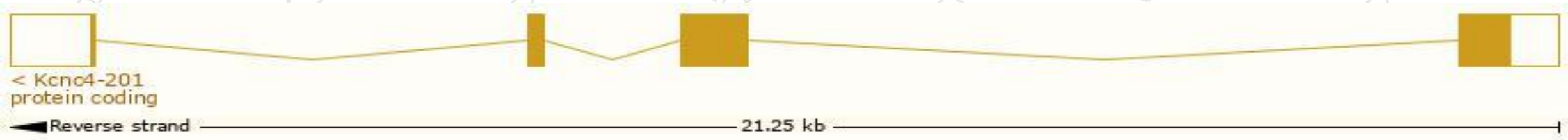
Annotation release	Status	Assembly	Chr	Location
108	current	GRCm38.p6 (GCF_000001635.26)	3	NC_000069.6 (107438298..107460287, complement)
Build 37.2	previous assembly	MGSCv37 (GCF_000001635.18)	3	NC_000069.5 (107241221..107261816, complement)

Transcript information (Ensembl)

The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Kcnc4-201	ENSMUST00000009617.9	3667	628aa	Protein coding	CCDS17738	Q8R1C0	TSL:1 GENCODE basic APPRIS P2
Kcnc4-202	ENSMUST00000238670.1	2664	666aa	Protein coding	-	-	GENCODE basic APPRIS ALT2

The strategy is based on the design of *Kcnc4-201* transcript,The transcription is shown below



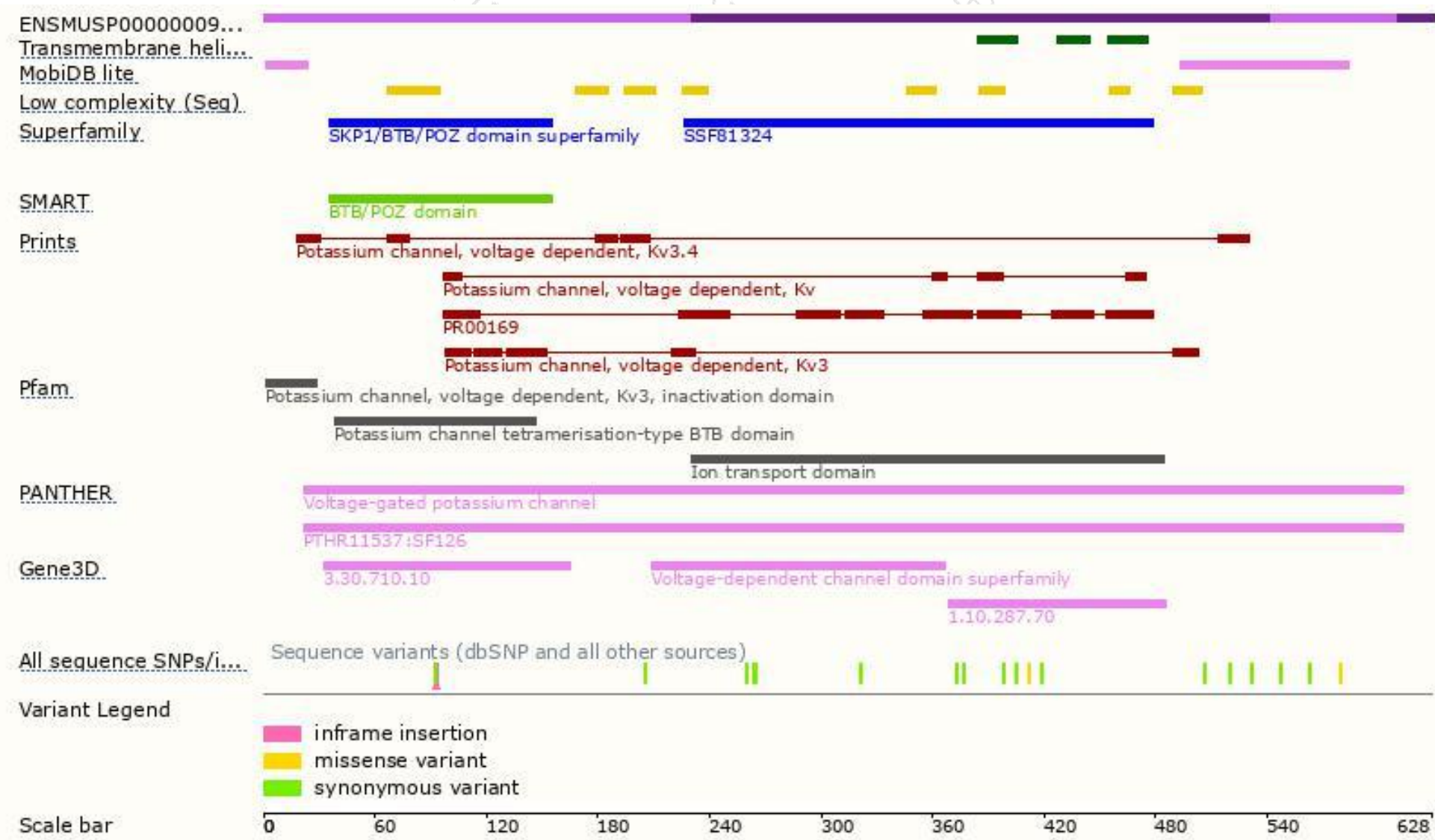
Genomic location distribution



Protein domain



集萃药康
GemPharmatech



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

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