GemPharmatech™

S100g Cas9-KO Strategy

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Overview

Target Gene Name

- *S100g*

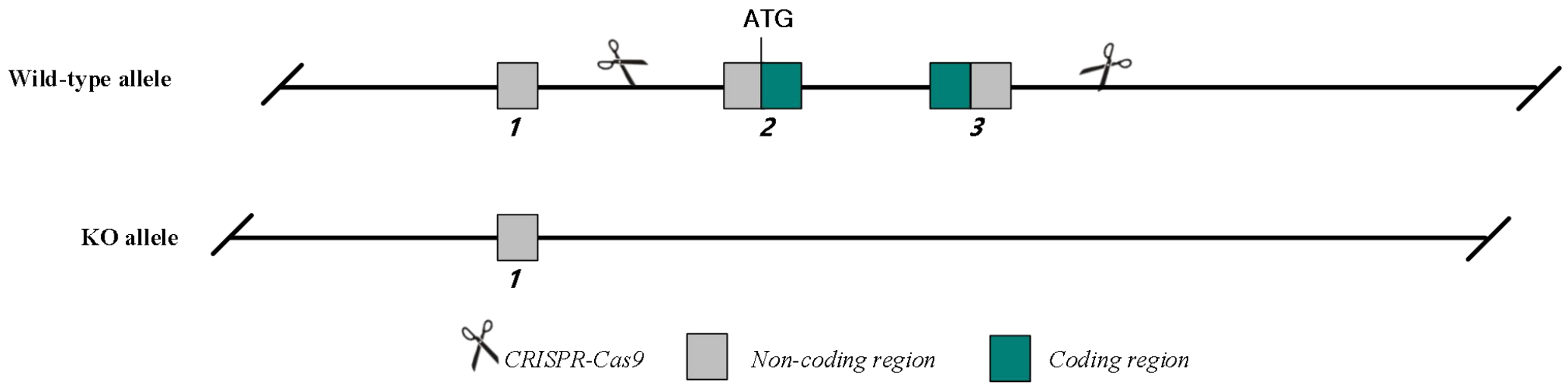
Project Type

- Cas9-KO

Genetic Background

- C57BL/6JGpt

Strain Strategy



Schematic representation of CRISPR-Cas9 engineering used to edit the *S100g* gene.

Technical Information

- The *S100g* gene has 1 transcript. According to the structure of *S100g* gene, exon2-3 of *S100g*-201 (ENSMUST00000038769.3) transcript is recommended as the knockout region. Knocking out the region will result in deletion all coding region of *S100g*, which may disrupt the function of *S100g*.
- In this project we use CRISPR-Cas9 technology to modify *S100g* gene. The brief process is as follows: Cas9 and gRNAs 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 on-target amplicon sequencing. A stable F1-generation mouse strain was obtained by mating positive F0-generation mice with C57BL/6JGpt mice and confirmation of the desired mutant allele was carried out by PCR and on-target amplicon sequencing.

Gene Information

S100g S100 calcium binding protein G [*Mus musculus* (house mouse)]

Download Datasets

Gene ID: 12309, updated on 18-Aug-2023

Summary

Official Symbol	S100g provided by MGI
Official Full Name	S100 calcium binding protein G provided by MGI
Primary source	MGI:MGI:104528
See related	Ensembl:ENSMUSG00000040808 AllianceGenome:MGI:104528
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	CABP1; Calb3; Cabp9k; CaBP-D9K
Summary	Predicted to enable calcium ion binding activity and calcium-dependent protein binding activity. Located in apical plasma membrane and basolateral plasma membrane. Is expressed in extraembryonic component; gut; metanephros; and ureter. Orthologous to human S100G (S100 calcium binding protein G). [provided by Alliance of Genome Resources, Apr 2022]
Expression	Biased expression in placenta adult (RPKM 553.0), kidney adult (RPKM 166.8) and 2 other tissues See more
Orthologs	human all

NEW **Try the new Gene table**

Try the new Transcript table

Source: https://www.ncbi.nlm.nih.gov/

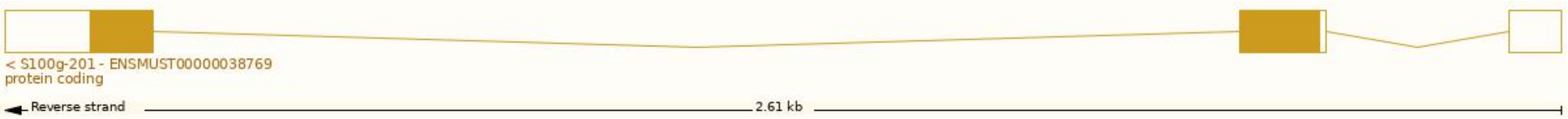
Transcript Information

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

Show/hide columns (1 hidden) Filter

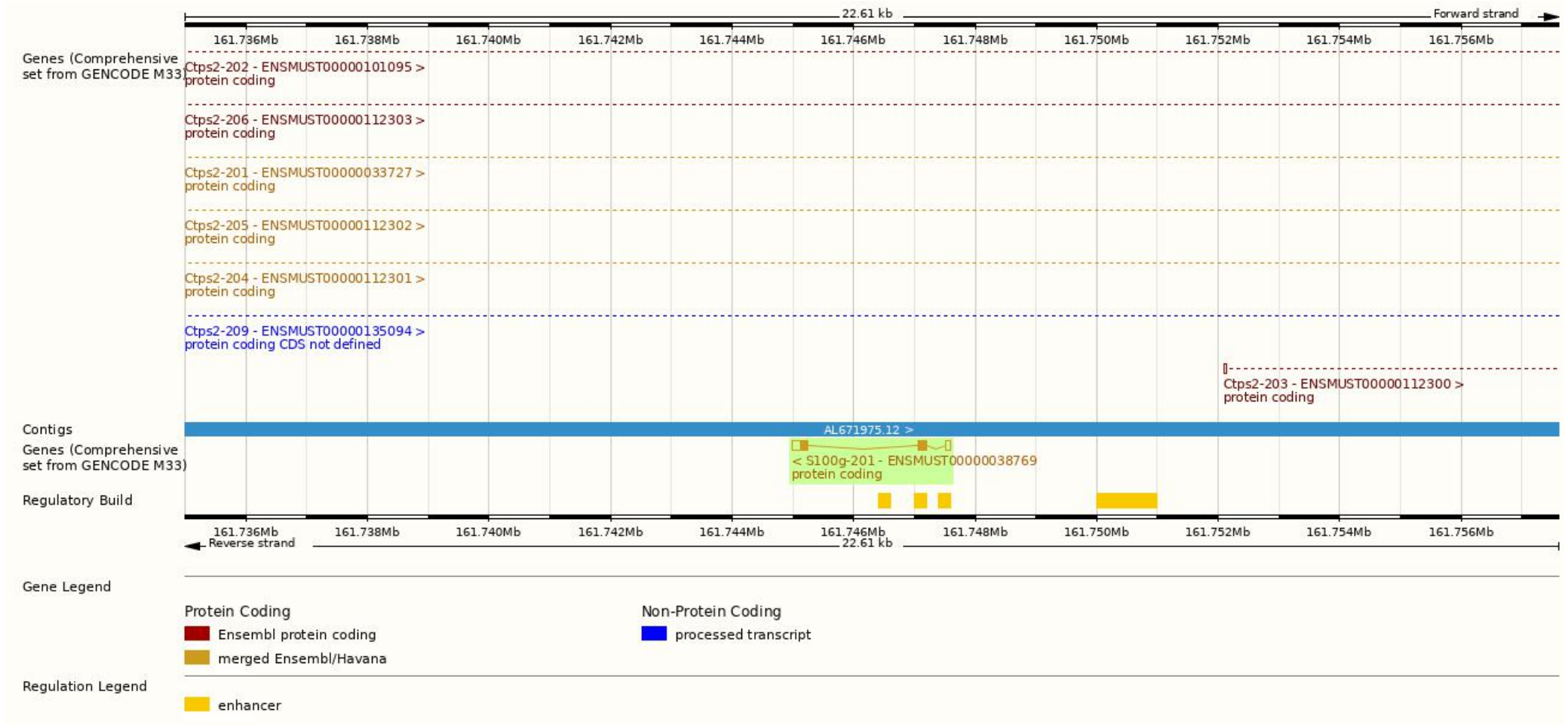
Transcript ID	Name	bp	Protein	Biotype	CCDS	UniProt Match	Flags
ENSMUST00000038769.3	S100g-201	480	79aa	Protein coding	CCDS41203	P97816 Q5VM59	Ensembl Canonical GENCODE basic APPRIS P1 TSL:1

The strategy is based on the design of *S100g*-201 transcript, the transcription is shown below:



Source: https://www.ensembl.org

Genomic Information



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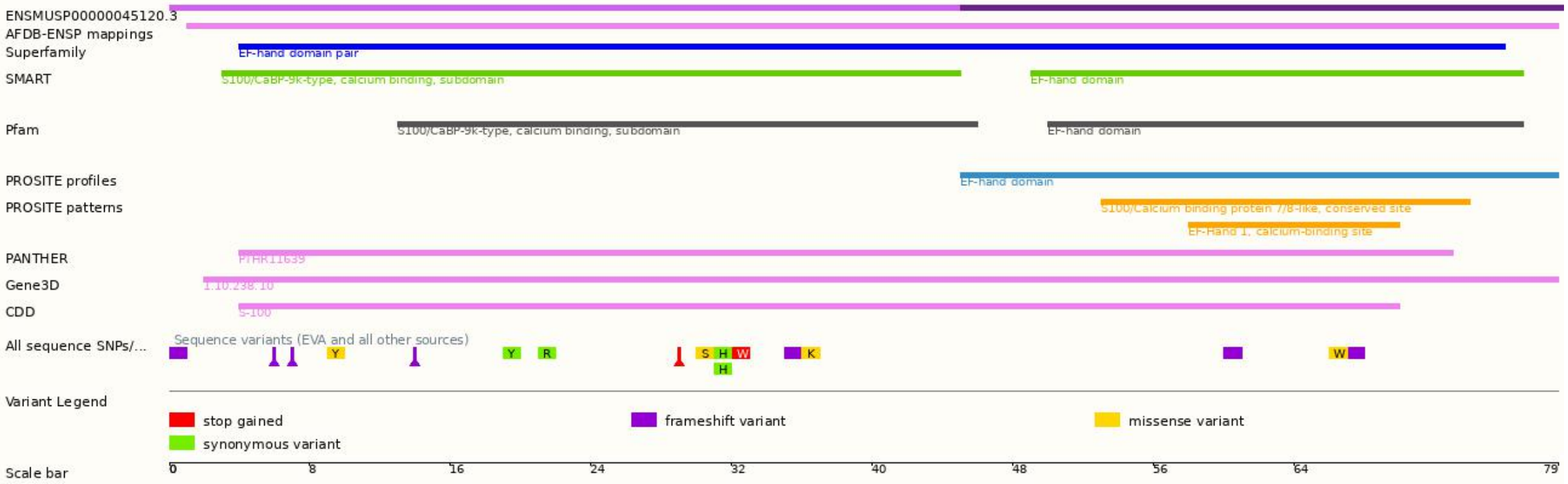
Source: : https://www.ensembl.org

Protein Information



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Source: : https://www.ensembl.org

Important Information

- Homozygous null mice do not exhibit any obvious abnormalities; in particular, these mice do not exhibit skeletal defects or any abnormalities of calcium homeostasis.
- **The knockout region located in the intron of *Ctps1*, which may affect the regulation of this gene, the risk is unknown.**
- *S100g* is located on ChrX. If the knockout mice are crossed with other mouse strains to obtain double homozygous mutant offspring, please avoid the situation that the second gene is 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.