Slc5a5 Cas9-KO Strategy

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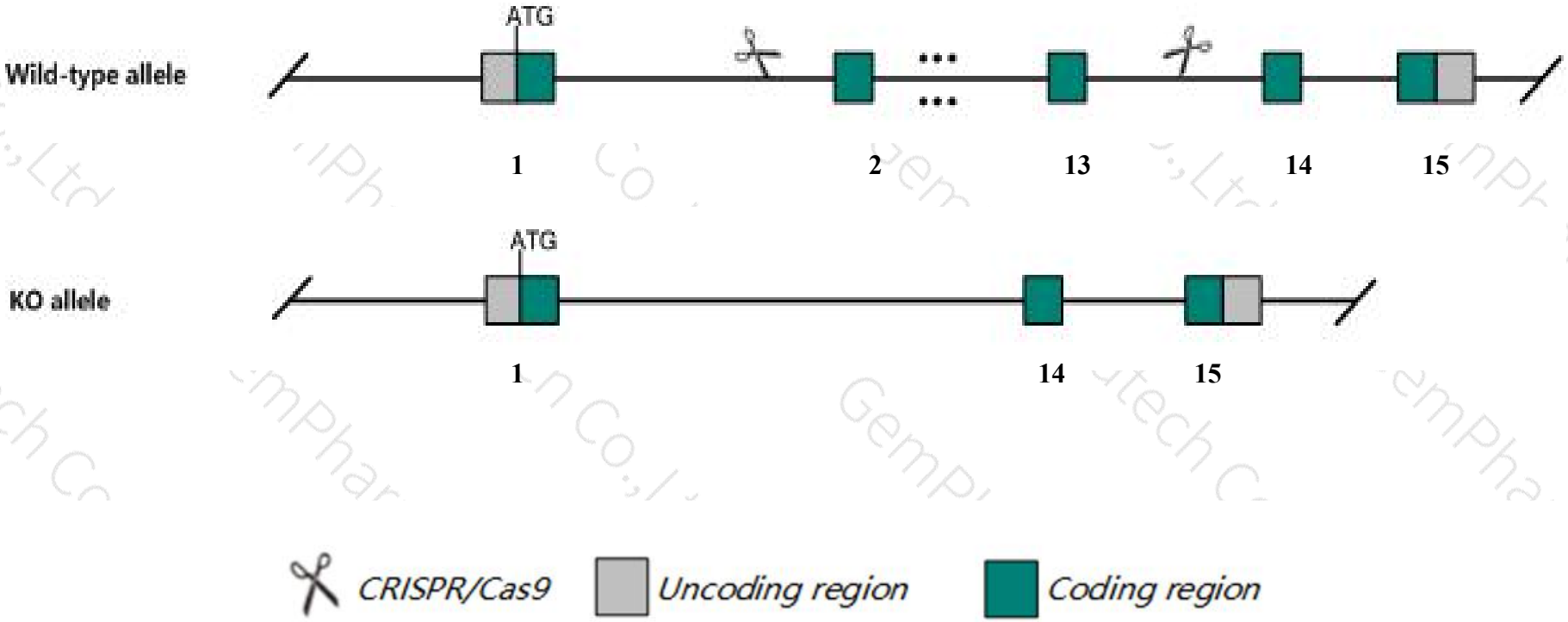
Project Overview

Project Name	***Slc5a5***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc5a5* gene. The schematic diagram is as follows:



Technical routes

➢ The *Slc5a5* gene has 1 transcript. According to the structure of *Slc5a5* gene, exon2-exon13 of *Slc5a5-201* (ENSMUST00000000809.2) transcript is recommended as the knockout region.The region contains 1279bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Slc5a5* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

- According to the existing MGI data,Mice homozygous for a knock-out allele exhibit reduced T3 and T4 levels when fed a minimal iodine diet.

- The N-terminus may remain around 120 amino acids, and some functions may be retained.

- The *Slc5a5* 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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Slc5a5 solute carrier family 5 (sodium iodide symporter), member 5 [Mus musculus (house mouse)]

Gene ID: 114479, updated on 31-Jan-2019

Summary

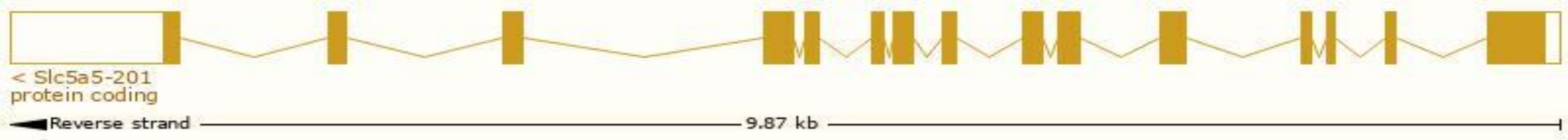
Official Symbol	Slc5a5 provided by MGI
Official Full Name	solute carrier family 5 (sodium iodide symporter), member 5 provided by MGI
Primary source	MGI:MGI:2149330
See related	Ensembl:ENSMUSG00000000792
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	NIS
Expression	Biased expression in stomach adult (RPKM 130.4) and mammary gland adult (RPKM 64.6) See more
Orthologs	human all

Transcript information（Ensembl）

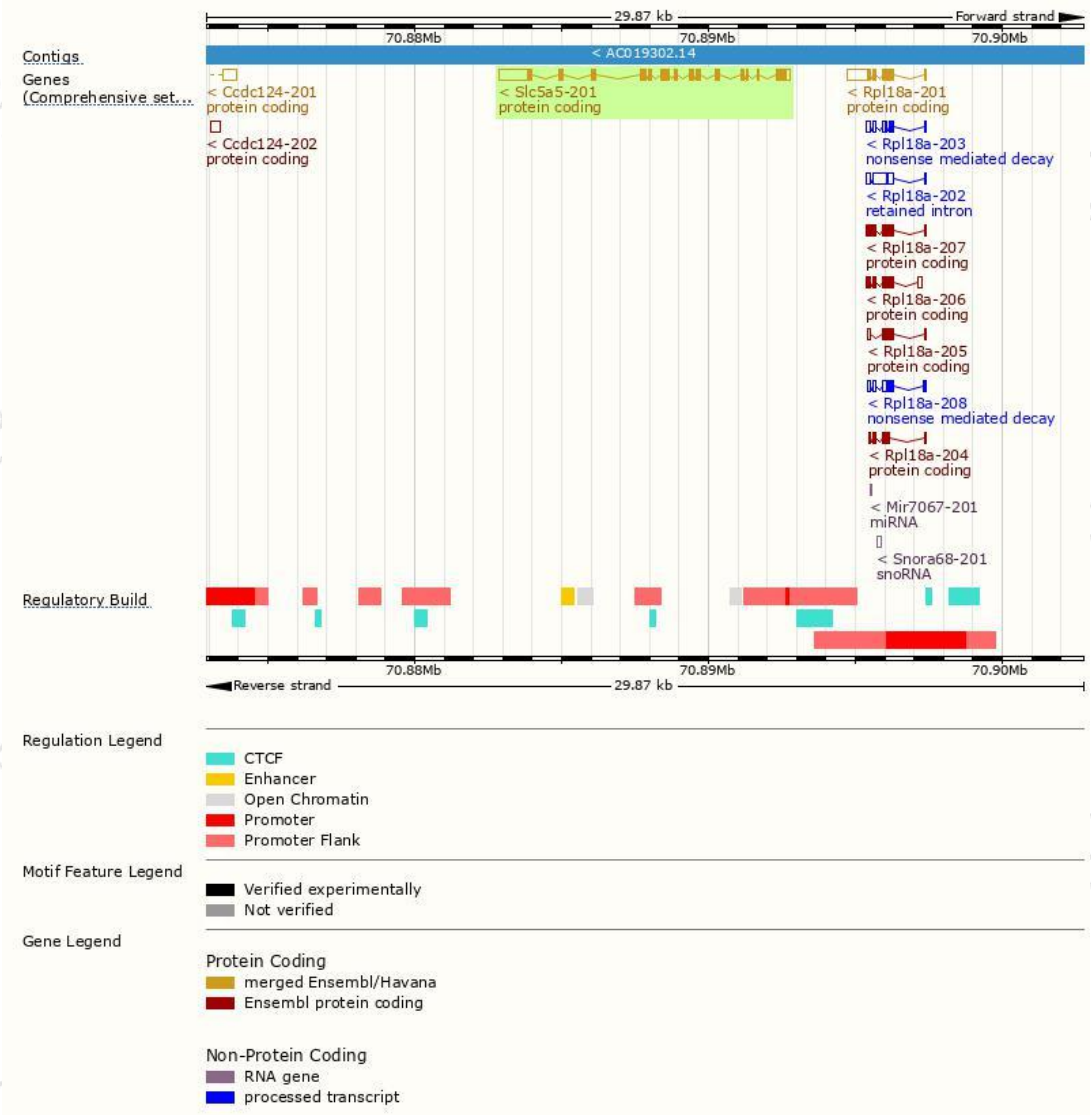
The gene has 1 transcript,and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc5a5-201	ENSMUST00000000809.2	2928	618aa	Protein coding	CCDS22385	G3X8P5	TSL:1 GENCODE basic APPRIS P1

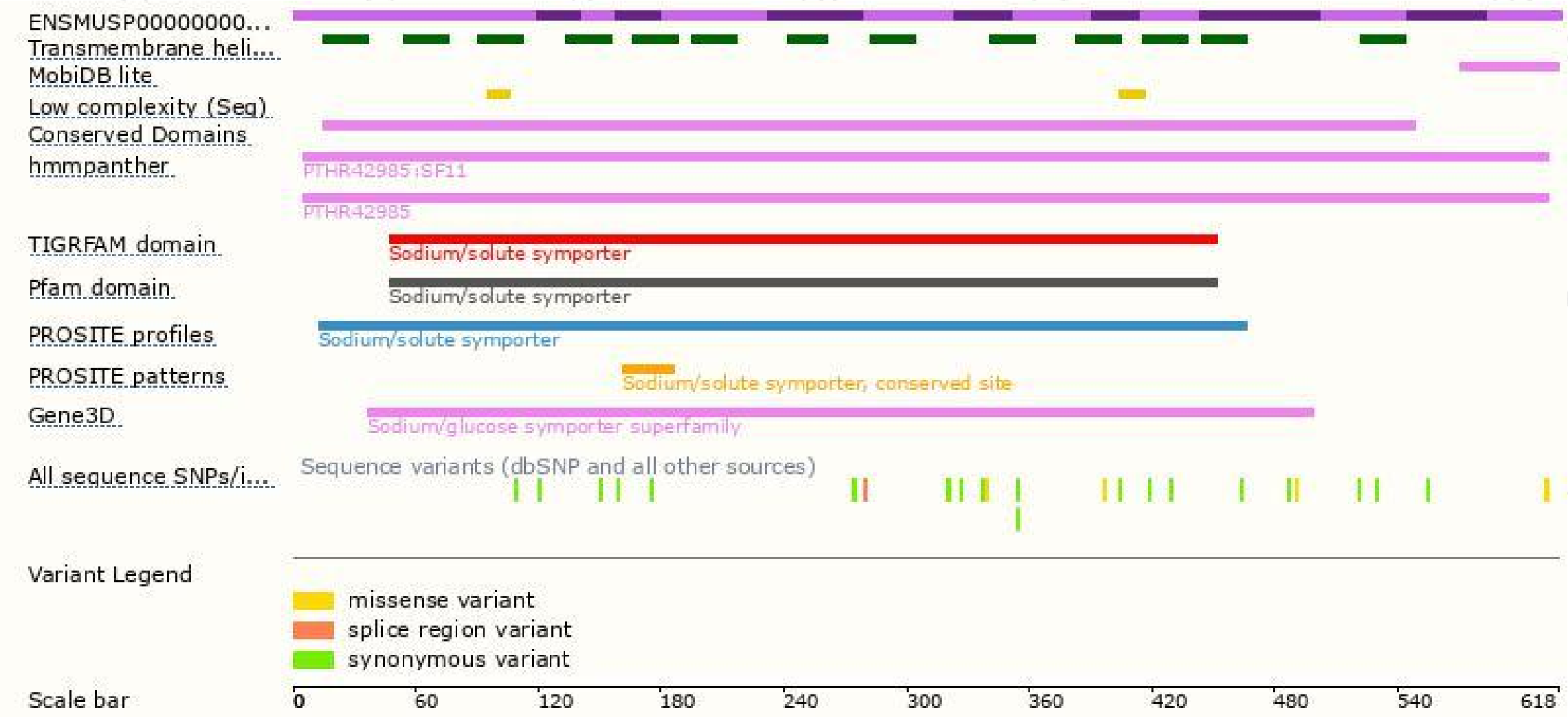
The strategy is based on the design of *Slc5a5-201* transcript,The transcription is shown below



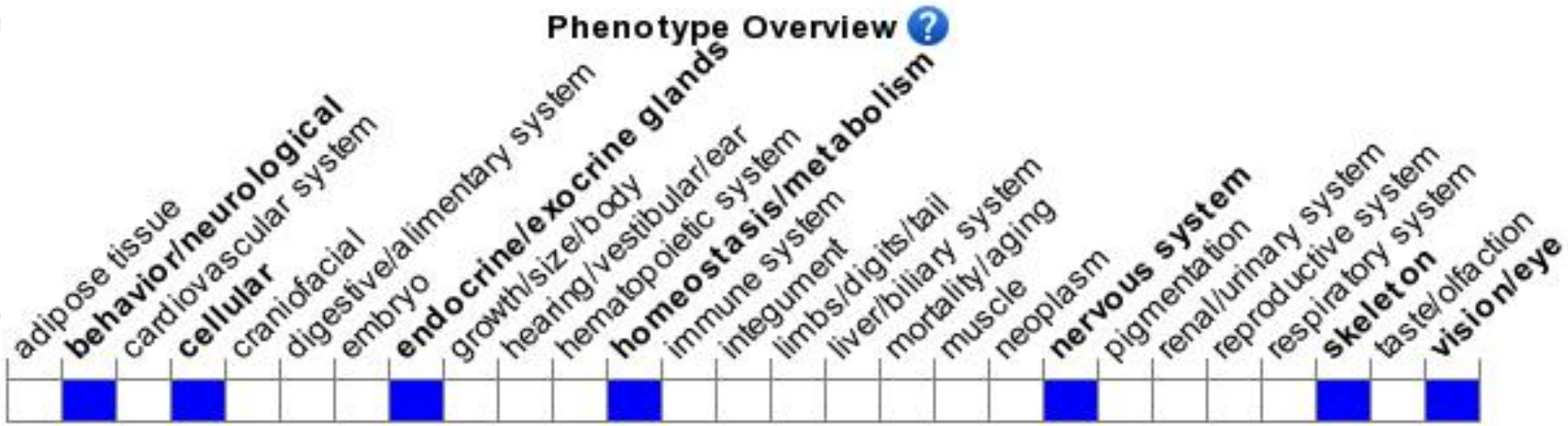
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue.Data quoted from MGI database(http://www.informatics.jax.org/).

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

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