

Slc25a14 Cas9-KO Strategy

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Reviewer:

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Design Date:

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Project Overview

Project Name

Slc25a14

Project type

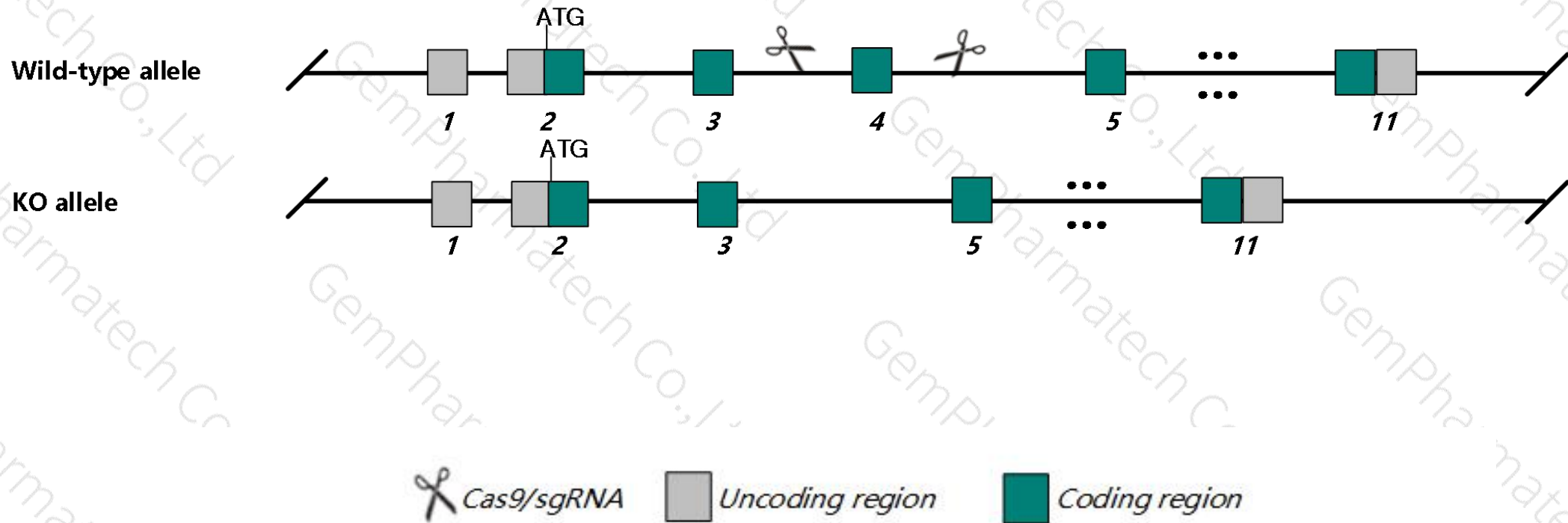
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc25a14* gene. The schematic diagram is as follows:



- The *Slc25a14* gene has 8 transcripts. According to the structure of *Slc25a14* gene, exon4 of *Slc25a14-202* (ENSMUST00000114936.7) transcript is recommended as the knockout region. The region contains 148bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc25a14* gene. The brief process is as follows: CRISPR/Cas9 syst

- Some amino acids will remain at the N-terminus and some functions may be retained.
- The *Slc25a14* gene is located on the ChrX. 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)

Slc25a14 solute carrier family 25 (mitochondrial carrier, brain), member 14 [*Mus musculus* (house mouse)]

Gene ID: 20523, updated on 13-Mar-2020

Summary

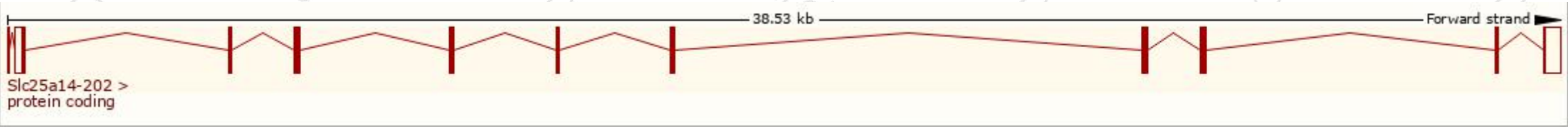
Official Symbol	Slc25a14 provided by MGI
Official Full Name	solute carrier family 25 (mitochondrial carrier, brain), member 14 provided by MGI
Primary source	MGI:MGI:1330823
See related	Ensembl:ENSMUSG000000031105
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	UCP5; BMCP1; UCP5L; UCP5S
Expression	Broad expression in cortex adult (RPKM 9.8), frontal lobe adult (RPKM 8.9) and 17 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

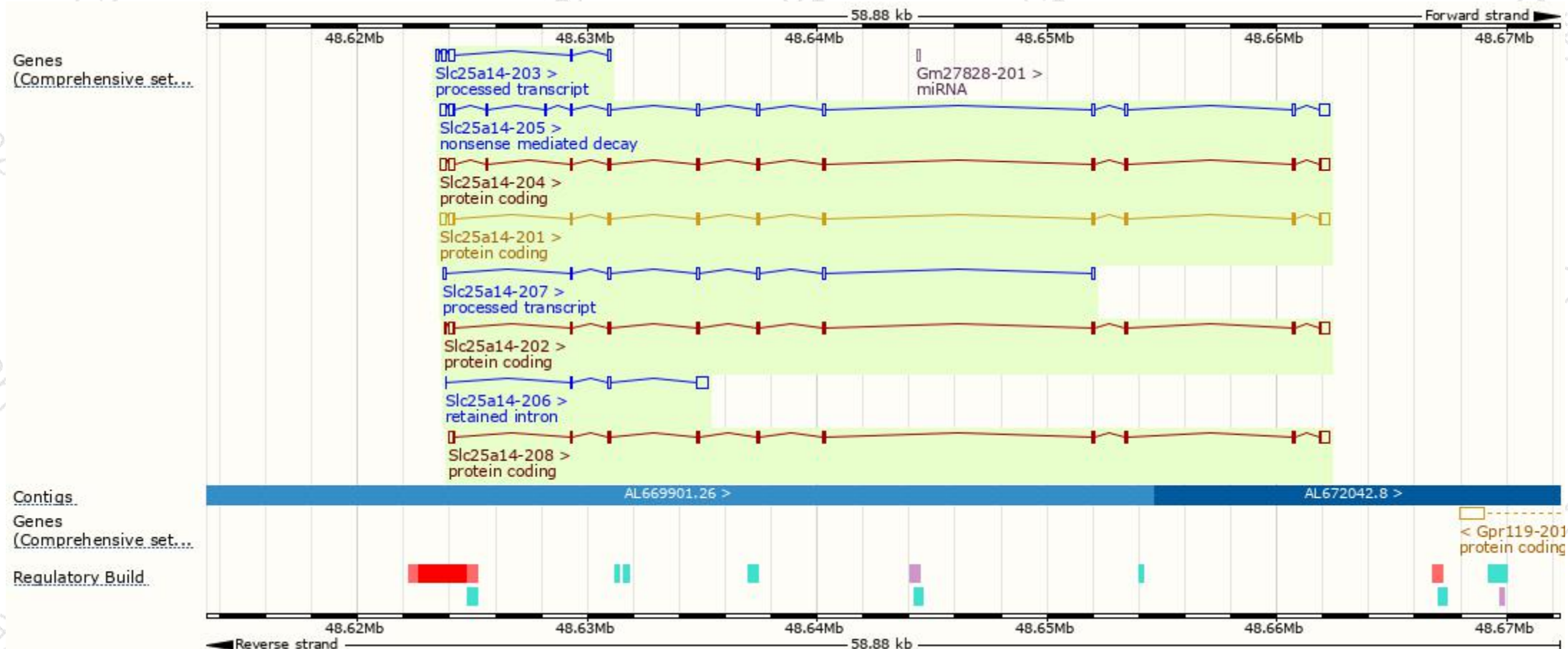
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc25a14-204	ENSMUST00000134257.7	1805	290aa	Protein coding	CCDS72376	A0A0A0MQJ8	TSL:5 GENCODE basic
Slc25a14-201	ENSMUST00000033431.13	1760	322aa	Protein coding	CCDS30112	Q9Z2B2	TSL:1 GENCODE basic APPRIS P3
Slc25a14-202	ENSMUST00000114936.7	1582	325aa	Protein coding	CCDS53066	Q9Z2B2	TSL:5 GENCODE basic APPRIS ALT1
Slc25a14-208	ENSMUST00000177710.1	1516	325aa	Protein coding	CCDS53066	Q9Z2B2	TSL:1 GENCODE basic APPRIS ALT1
Slc25a14-205	ENSMUST00000134757.7	1862	35aa	Nonsense mediated decay	-	F2Z407	TSL:1
Slc25a14-203	ENSMUST00000128773.7	738	No protein	Processed transcript	-	-	TSL:5
Slc25a14-207	ENSMUST00000153047.7	724	No protein	Processed transcript	-	-	TSL:2
Slc25a14-206	ENSMUST00000150221.1	752	No protein	Retained intron	-	-	TSL:2

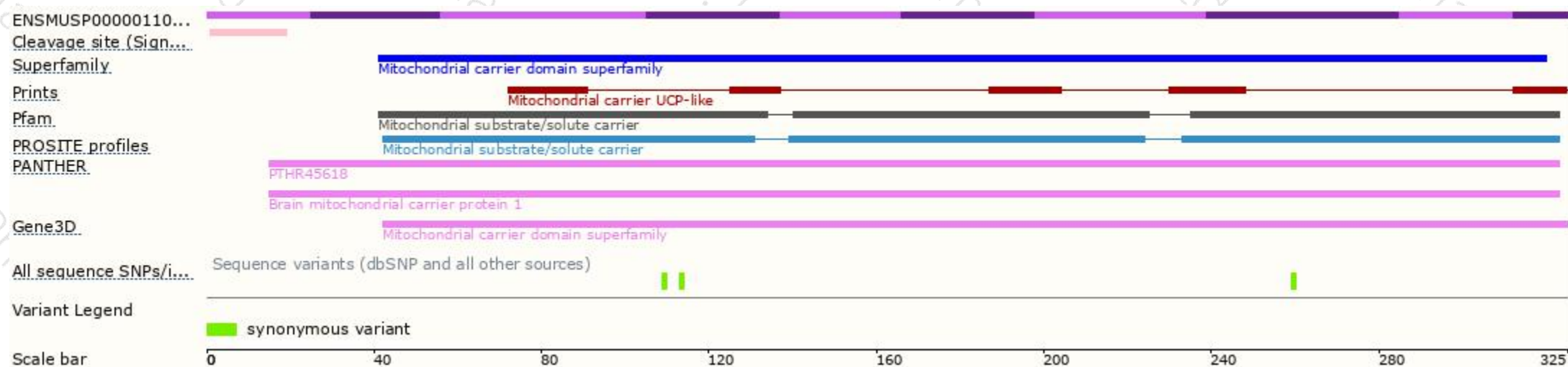
The strategy is based on the design of *Slc25a14-202* transcript,The transcription is shown below



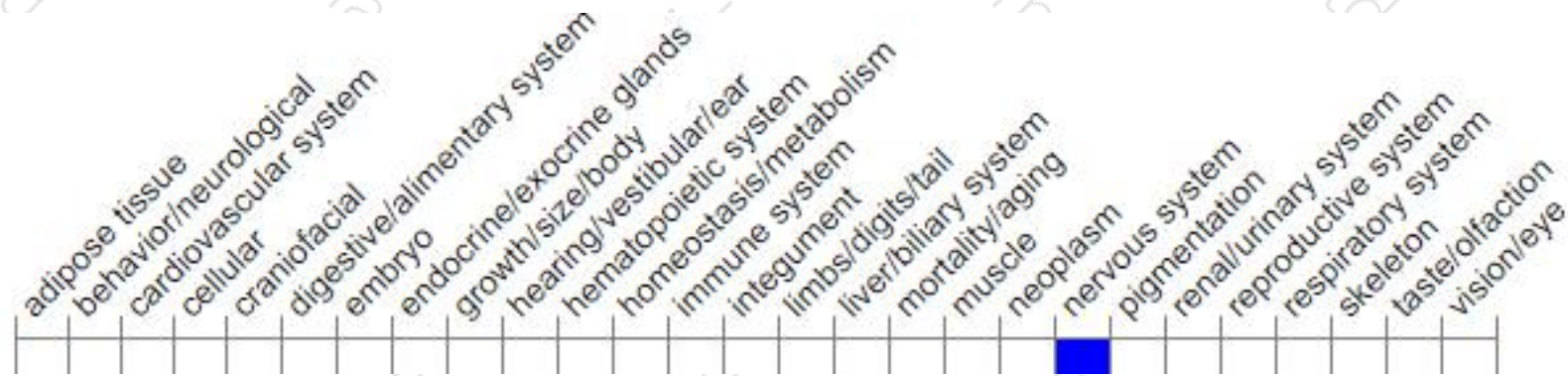
Genomic location distribution



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/>).

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

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