

# *Slc16a3* Cas9-KO Strategy

**Designer:**

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**Design Date:**

**2019-7-26**

# Project Overview

**Project Name**

*Slc16a3*

**Project type**

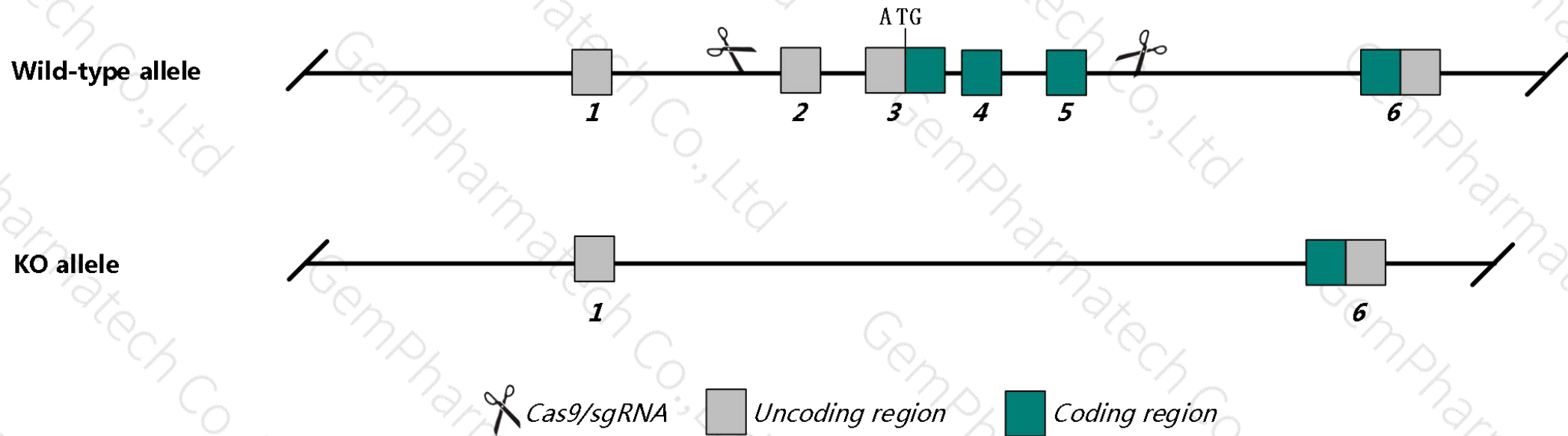
**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc16a3* gene. The schematic diagram is as follows:



# Technical routes

- The *Slc16a3* gene has 8 transcripts. According to the structure of *Slc16a3* gene, exon2-exon5 of *Slc16a3-201* (ENSMUST00000070653.12) transcript is recommended as the knockout region. The region contains the initiation codon ATG coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Slc16a3* gene. The brief process is as follows: CRISPR/Cas9 system t

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# Notice

- The *Slc16a3* gene is located on the Chr11. 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 knockout on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.



# Gene information (NCBI)

## Slc16a3 solute carrier family 16 (monocarboxylic acid transporters), member 3 [Mus musculus (house mouse)]

Gene ID: 80879, updated on 3-Feb-2019

### Summary



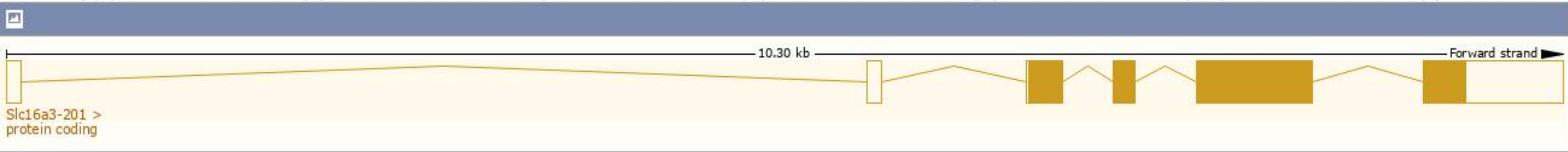
<b>Official Symbol</b>	Slc16a3 provided by <a href="#">MGI</a>
<b>Official Full Name</b>	solute carrier family 16 (monocarboxylic acid transporters), member 3 provided by <a href="#">MGI</a>
<b>Primary source</b>	<a href="#">MGI:MGI:1933438</a>
<b>See related</b>	<a href="#">Ensembl:ENSMUSG000000025161</a>
<b>Gene type</b>	protein coding
<b>RefSeq status</b>	VALIDATED
<b>Organism</b>	<a href="#">Mus musculus</a>
<b>Lineage</b>	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
<b>Also known as</b>	Mct3, Mct4
<b>Expression</b>	Broad expression in placenta adult (RPKM 14.2), duodenum adult (RPKM 13.7) and 22 other tissues <a href="#">See more</a>
<b>Orthologs</b>	<a href="#">human</a> <a href="#">all</a>

# Transcript information (Ensembl)

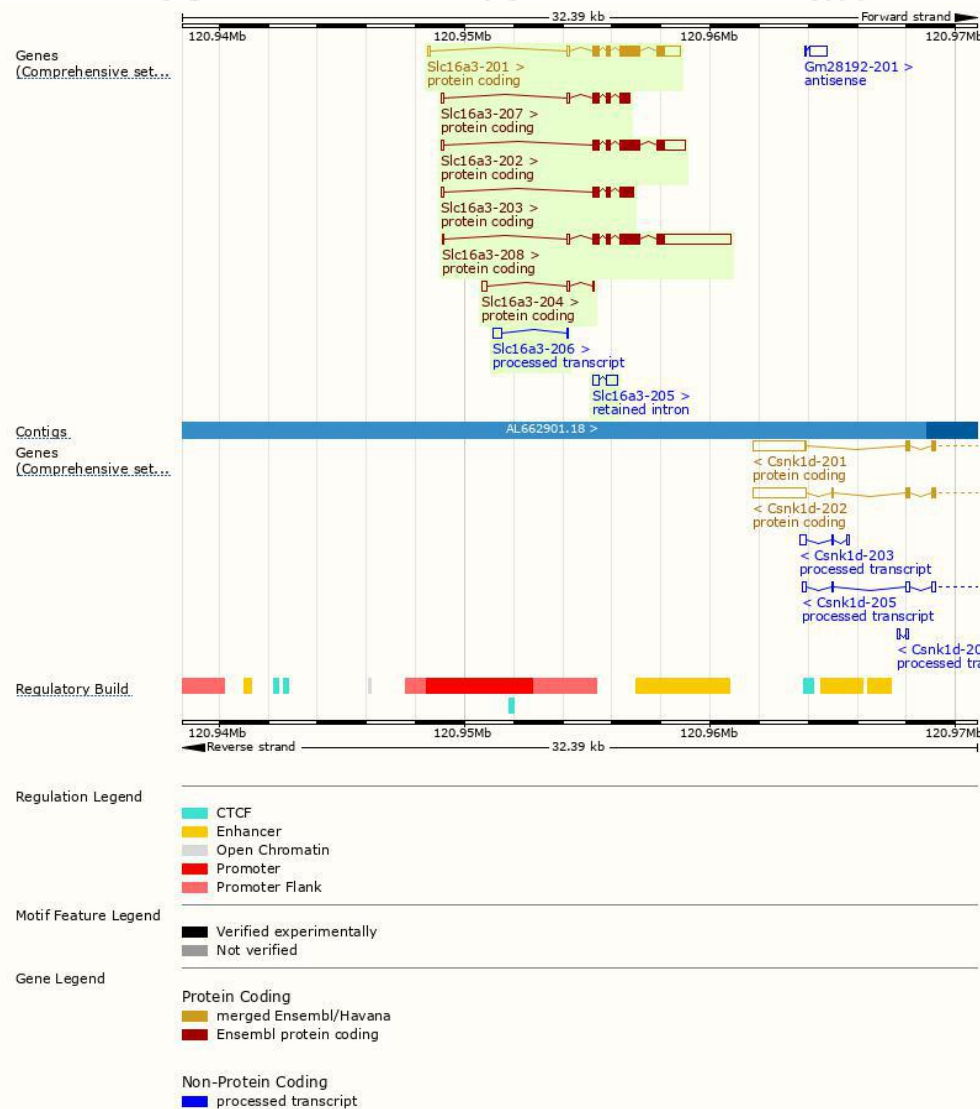
The gene has 8 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc16a3-208	<a href="#">ENSMUST00000168579.7</a>	4335	<a href="#">470aa</a>	Protein coding	<a href="#">CCDS25761</a>	<a href="#">P57787 Q3UDP9</a>	TSL:1 GENCODE basic APPRIS P1
Slc16a3-202	<a href="#">ENSMUST00000100130.9</a>	2386	<a href="#">470aa</a>	Protein coding	<a href="#">CCDS25761</a>	<a href="#">P57787 Q3UDP9</a>	TSL:1 GENCODE basic APPRIS P1
Slc16a3-201	<a href="#">ENSMUST00000070653.12</a>	2272	<a href="#">470aa</a>	Protein coding	<a href="#">CCDS25761</a>	<a href="#">P57787 Q3UDP9</a>	TSL:1 GENCODE basic APPRIS P1
Slc16a3-203	<a href="#">ENSMUST00000129473.7</a>	975	<a href="#">291aa</a>	Protein coding	-	<a href="#">B1ATM2</a>	CDS 3' incomplete TSL:3
Slc16a3-207	<a href="#">ENSMUST00000154187.7</a>	974	<a href="#">253aa</a>	Protein coding	-	<a href="#">B1ATM1</a>	CDS 3' incomplete TSL:2
Slc16a3-204	<a href="#">ENSMUST00000133029.1</a>	353	<a href="#">9aa</a>	Protein coding	-	<a href="#">A0A0G2JD98</a>	CDS 3' incomplete TSL:3
Slc16a3-206	<a href="#">ENSMUST00000140467.1</a>	395	No protein	Processed transcript	-	-	TSL:3
Slc16a3-205	<a href="#">ENSMUST00000134540.1</a>	677	No protein	Retained intron	-	-	TSL:2

The strategy is based on the design of *Slc16a3-201* transcript,The transcription is shown below

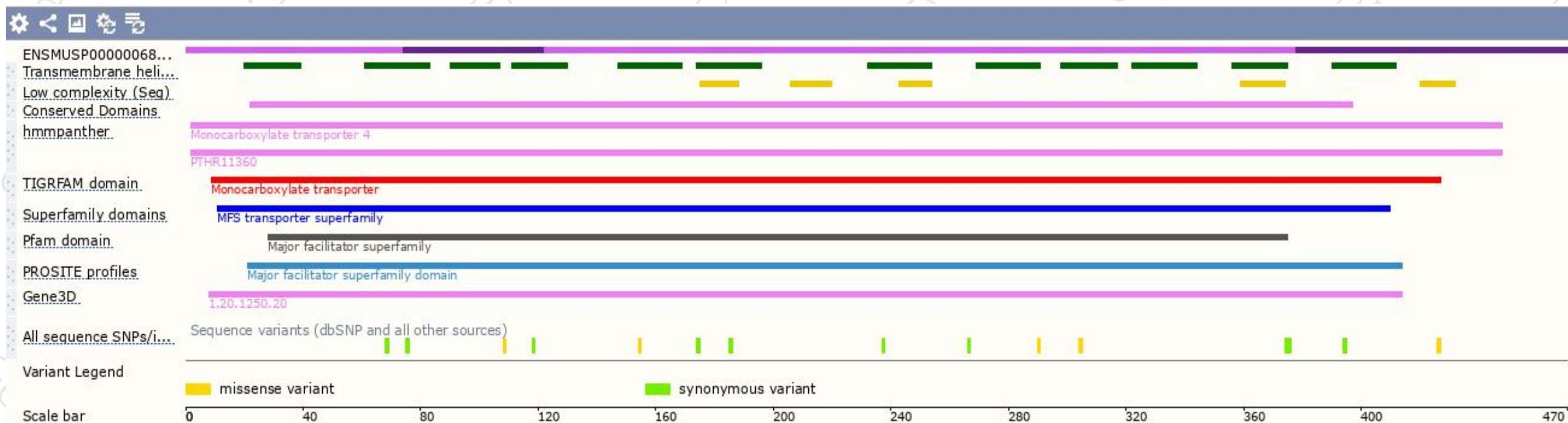


# Genomic location distribution

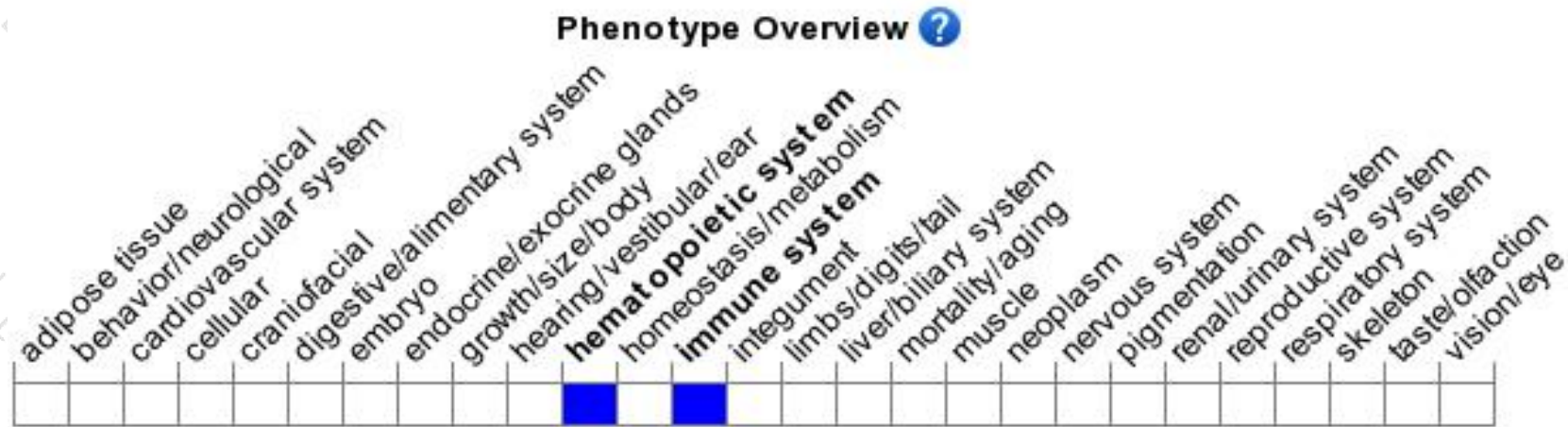




# Protein domain



# Mouse phenotype description(MGI)



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

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

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