Slc6a20b Cas9-CKO Strategy

Designer: Daohua Xu
Reviewer: Huimin Su

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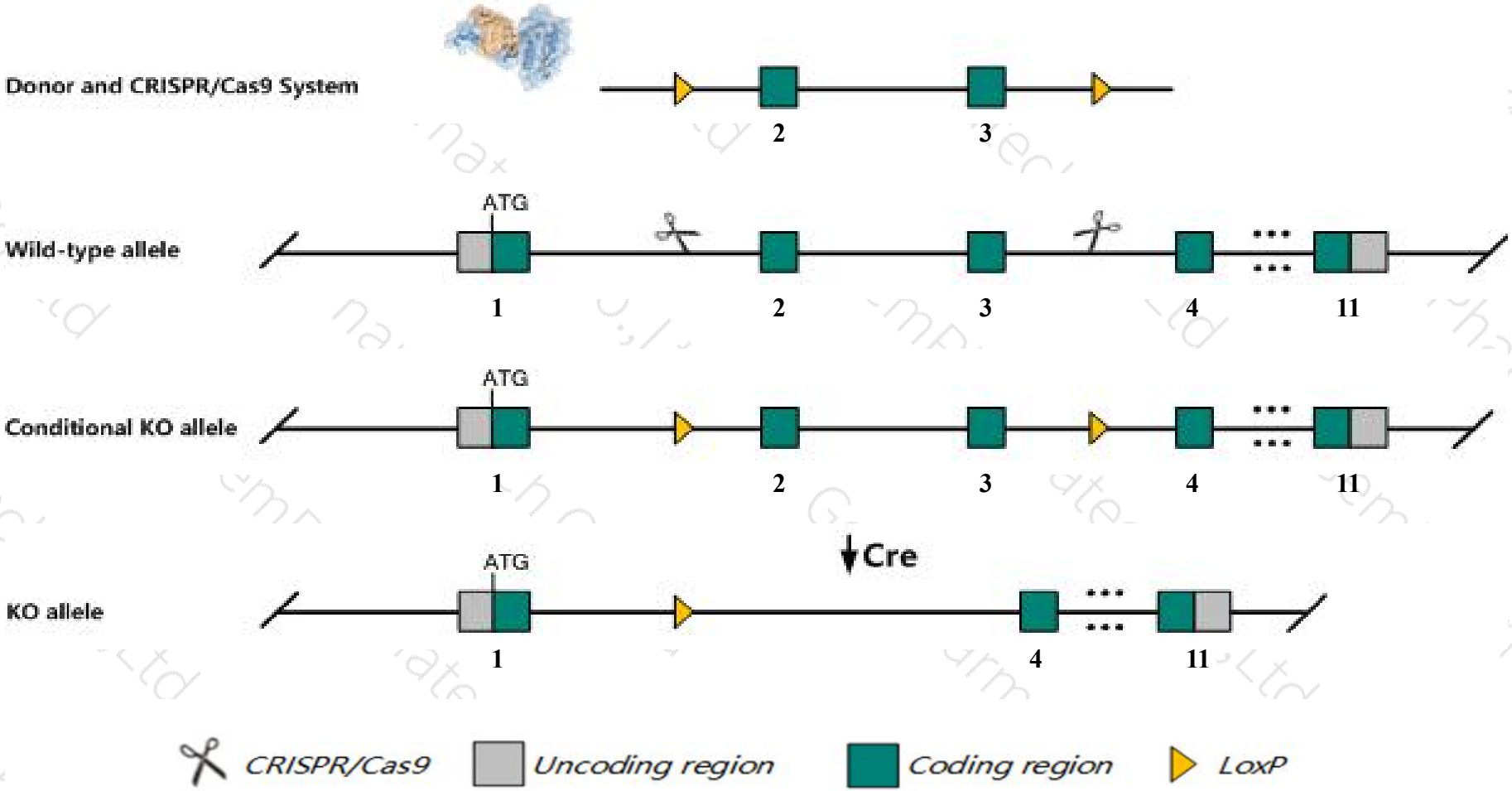
Project Overview

Project Name	***Slc6a20b***
Project type	**Cas9-CKO**
Strain background	**C57BL/6JGpt**

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc6a20b* gene. The schematic diagram is as follows:



Technical routes

- The *Slc6a20b* gene has 6 transcripts. According to the structure of *Slc6a20b* gene, exon2-exon3 of *Slc6a20b-201* (ENSMUST00000026273.9) transcript is recommended as the knockout region.The region contains 233bp coding sequence. Knock out the region will result in disruption of protein function.

- In this project we use CRISPR/Cas9 technology to modify *Slc6a20b* gene. The brief process is as follows:CRISPR/Cas9 system and Donor 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 sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.

- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

➢ The *Slc6a20b* gene is located on the Chr9. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information （NCBI）

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Slc6a20b solute carrier family 6 (neurotransmitter transporter), member 20B [*Mus musculus* (house mouse)]

Gene ID: 22599, updated on 13-Mar-2020

Summary

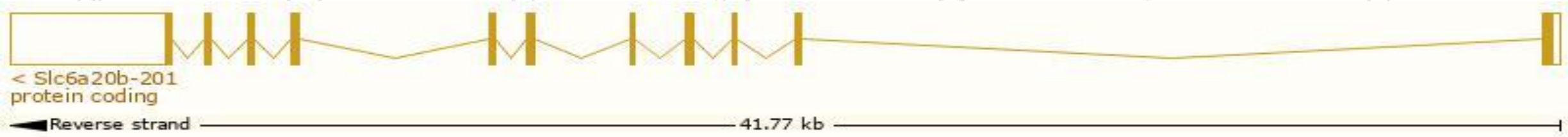
Official Symbol	Slc6a20b provided by MGI
Official Full Name	solute carrier family 6 (neurotransmitter transporter), member 20B provided by MGI
Primary source	MGI:MGI:1336891
See related	Ensembl:ENSMUSG00000025243
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	XT3; Sit1; Xtrp3; Slc6a20; AA986306
Expression	Biased expression in kidney adult (RPKM 92.2), duodenum adult (RPKM 16.4) and 2 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

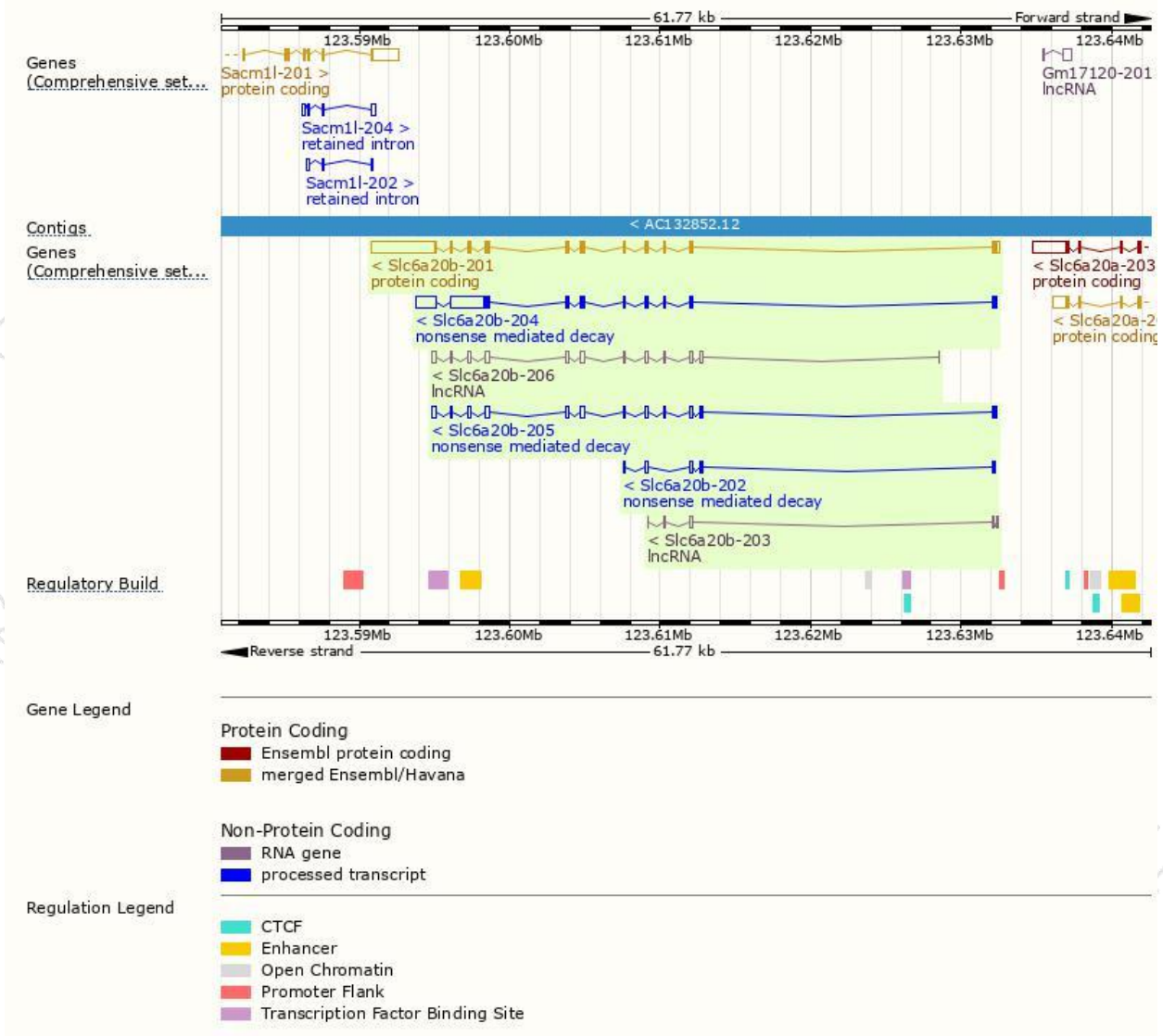
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc6a20b-201	ENSMUST00000026273.9	6307	635aa	Protein coding	CCDS23661	O88575	TSL:1 GENCODE basic APPRIS P1
Slc6a20b-204	ENSMUST00000166800.7	5163	532aa	Nonsense mediated decay	-	A0A1L1STV0	TSL:2
Slc6a20b-205	ENSMUST00000168824.7	2166	74aa	Nonsense mediated decay	-	F7AVF9	CDS 5' incomplete TSL:1
Slc6a20b-202	ENSMUST00000163397.7	716	59aa	Nonsense mediated decay	-	F6TTF6	CDS 5' incomplete TSL:5
Slc6a20b-206	ENSMUST00000171122.7	2017	No protein	Processed transcript	-	-	TSL:1
Slc6a20b-203	ENSMUST00000164241.1	485	No protein	Processed transcript	-	-	TSL:5

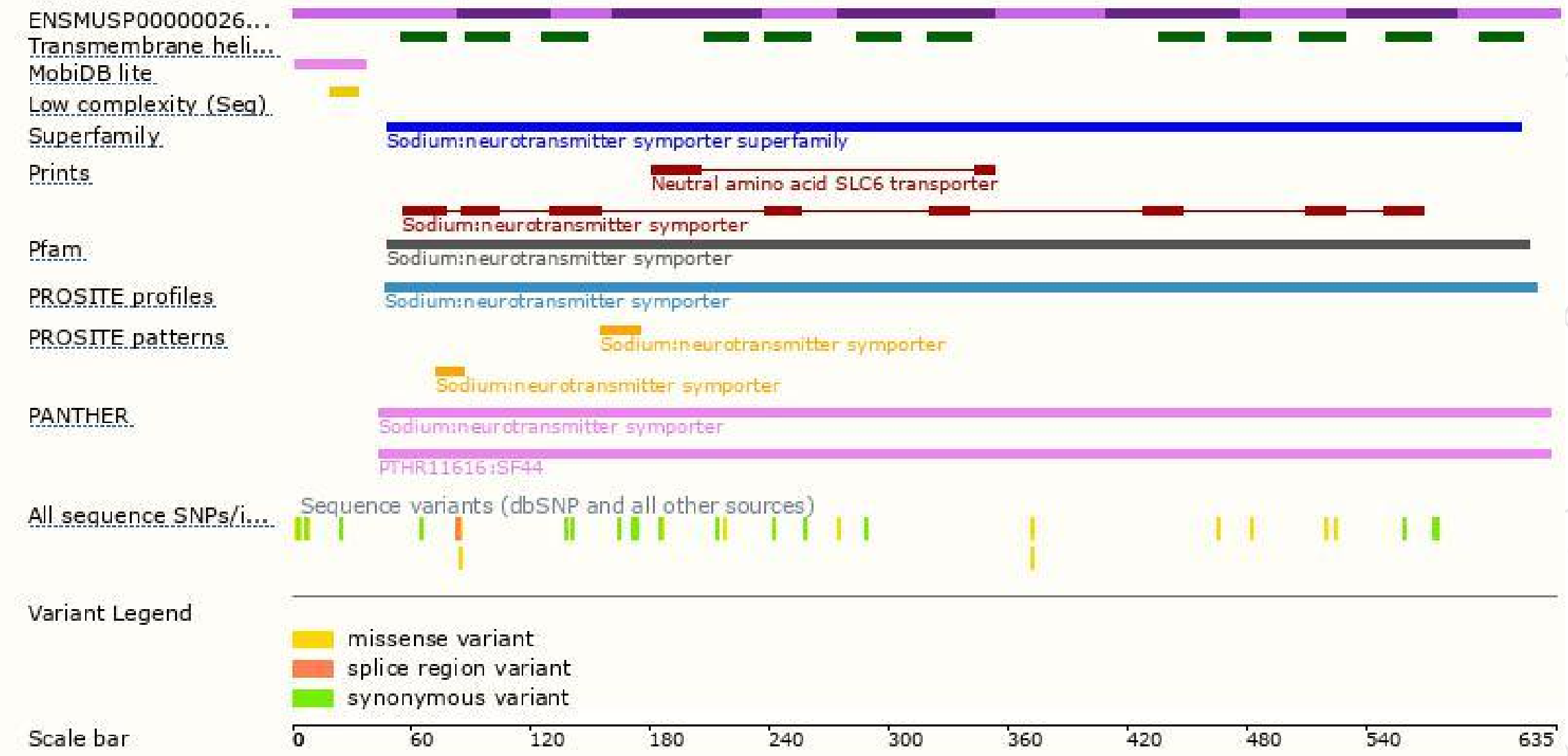
The strategy is based on the design of *Slc6a20b-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 400-9660890

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