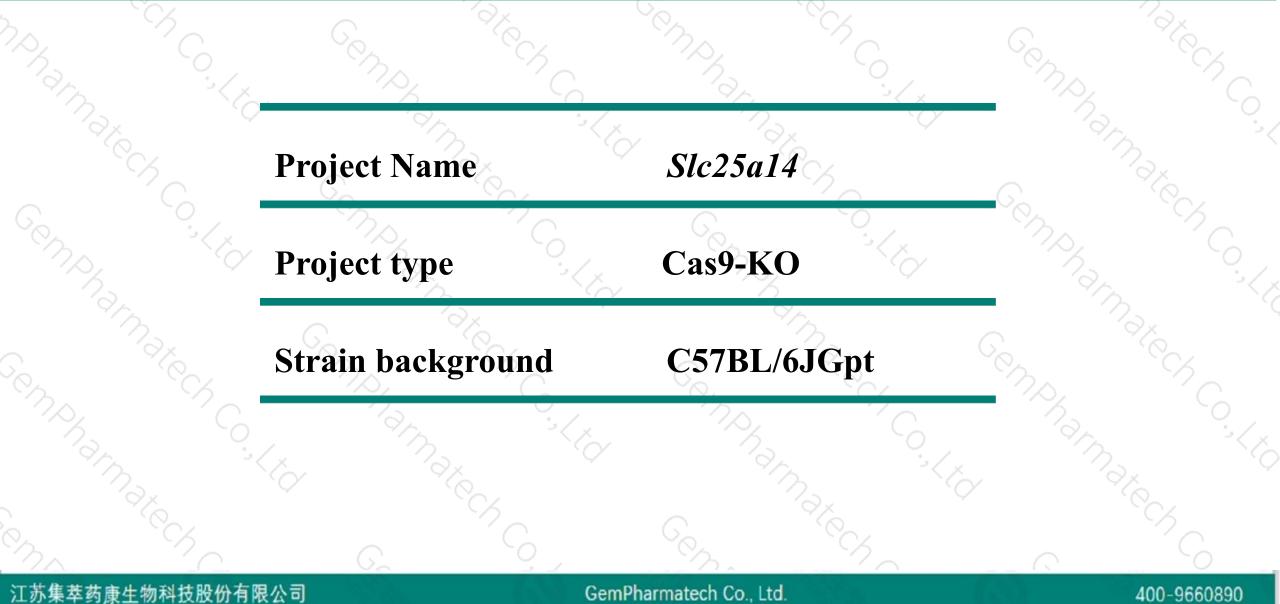


Slc25a14 Cas9-KO Strategy

Designer: Reviewer: Design Date: JiaYu Xiaojing Li 2020-3-16

Project Overview

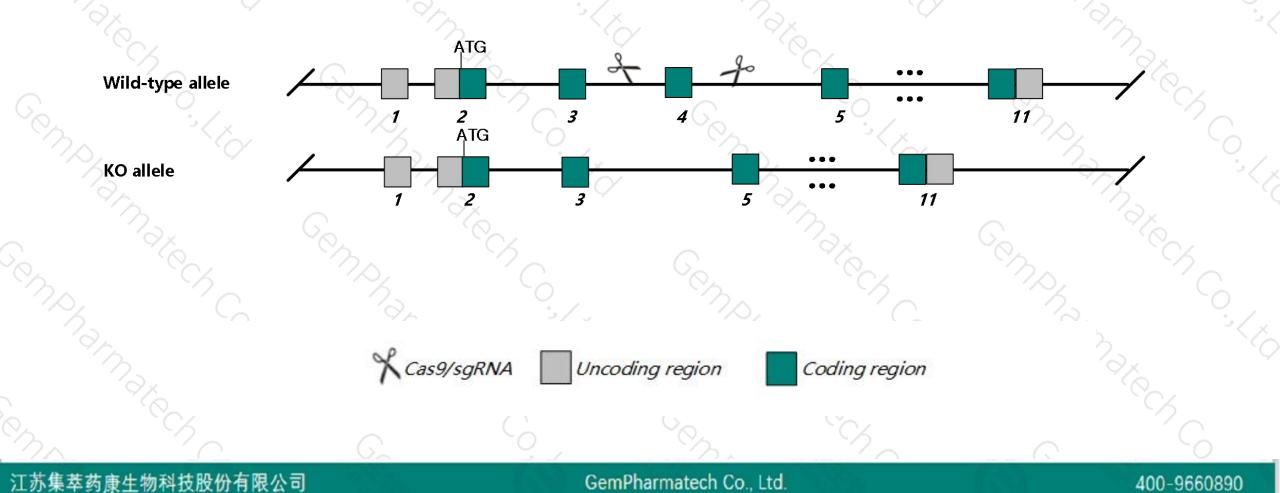




Knockout strategy



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



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- > 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.

Notice

Gene information (NCBI)



SIc25a14 solute carrier family 25 (mitochondrial carrier, brain), member 14 [Mus musculus (house mouse)]

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

Summary

2 ?

 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:ENSMUSG00000031105

 Gene type
 protein coding

 RefSeq status
 VALIDATED

 Organism
 Mus musculus

 Lineage
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; 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 <u>See more</u>

 Orthologs
 human all

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Transcript information (Ensembl)



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

Name 💧	Transcript ID	bp 💧	Protein 🛔	Biotype	CCDS 🔺 UniProt 🔺		Flags		
SIc25a14-204	ENSMUST00000134257.7	1805	<u>290aa</u>		<u>CCDS72376</u> 母	A0A0A0MQJ8	TSL:5 GENCODE basic		
Slc25a14-201	ENSMUST0000033431.13	1760	<u>322aa</u>	Protein coding	<u>CCDS30112</u> @	Q9Z2B2	TSL:1 GENCODE basic APPRIS P3		
SIc25a14-202	ENSMUST00000114936.7	1582	<u>325aa</u>	Protein coding	<u>CCDS53066</u> &	Q9Z2B2	TSL:5 GENCODE basic APPRIS ALT1		
SIc25a14-208	ENSMUST00000177710.1	1516	<u>325aa</u>	Protein coding	CCDS53066 @	Q9Z2B2	TSL:1 GENCODE basic APPRIS ALT1		
Slc25a14-205	ENSMUST00000134757.7	1862	<u>35aa</u>	Nonsense mediated decay	070	F2Z407@	TSL:1		
SIc25a14-203	ENSMUST00000128773.7	738	No protein	Processed transcript	070		TSL:5		
Slc25a14-207	ENSMUST00000153047.7	724	No protein	Processed transcript	070	-	TSL:2		
SIc25a14-206	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

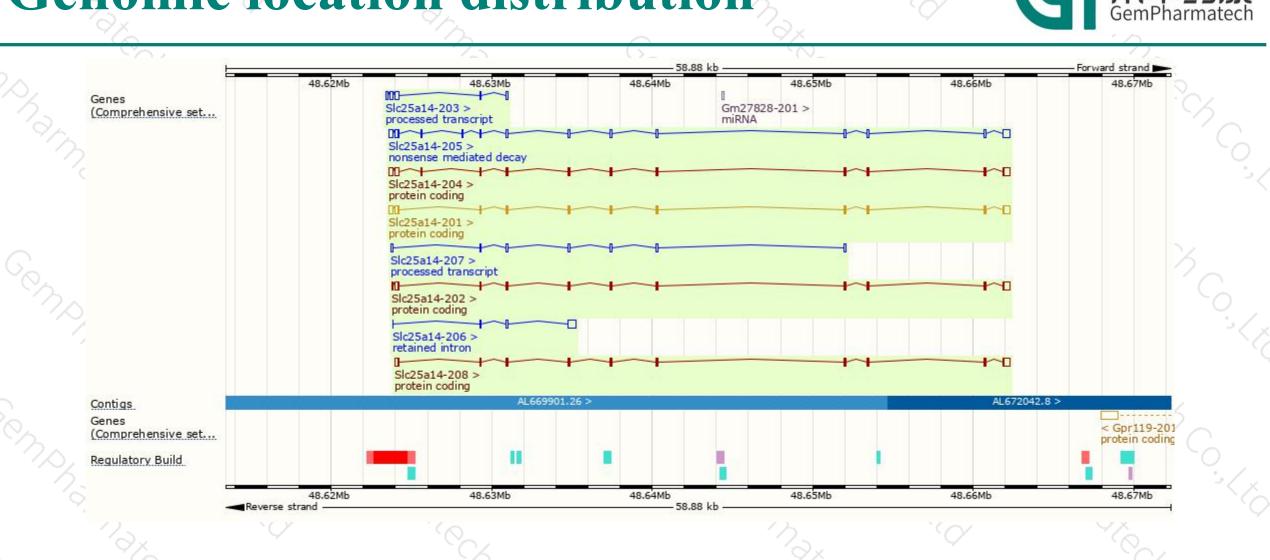
			38.53 kb			Forward strand
Slc25a14-202 > protein coding	•					2
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Genomic location distribution



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Protein domain



		- nsp	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				C MA	30
ENSMUSP00000110 Cleavage site (Sign								
Superfamily		Mitochondrial car	rier domain superfamily					
Prints			Mitochondrial carrier UCP	-like				
Pfam.		Mitochondrial su	ostrate/solute carrier					
PROSITE profiles PANTHER	PTHR4		bstrate/solute carrier					
20		mitochondrial carrier prote						
Gene3D		Mitochondrial ca	rrier domain superfamily					
All sequence SNPs/	i Sequence va	riants (dbSNP and all ot	her sources)	Ū.				
Variant Legend	synonyn	nous variant						
Scale bar	o	40	80	120 160	200	240	280	325
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Mouse phenotype description(MGI)

digestive almentary system

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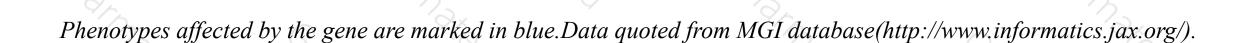
growthistelbody

cardiovascular system

behaviorineurological

adipose tissue





IN BIDINARY SYSTE

morality/aging

neoplasm

limbs/digits/all

renalumarysystem reproductive system respiratory system

tasteloltac. Visionley

newoussystem

pignentation

henatopoietic system

heatholyestoularleat

honeostassimetabolis



If you have any questions, you are welcome to inquire. Tel: 400-9660890



