Slc35a3 Cas9-KO Strategy

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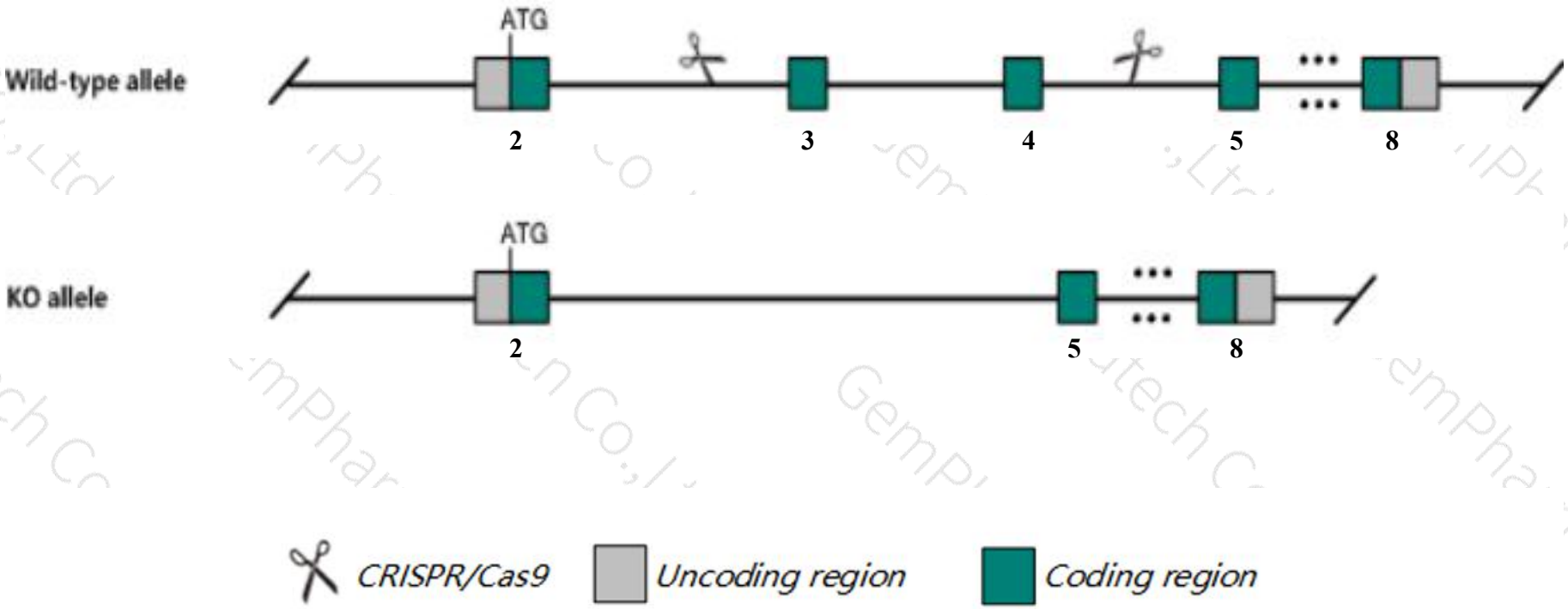
Project Overview

Project Name	***Slc35a3***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Slc35a3* gene. The schematic diagram is as follows:



Technical routes

➢ The *Slc35a3* gene has 7 transcripts. According to the structure of *Slc35a3* gene, exon3-exon4 of *Slc35a3-201*(ENSMUST00000029569.8) transcript is recommended as the knockout region.The region contains 278bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Slc35a3* gene. The brief process is as follows: gRNA was transcribed in vitro.Cas9 and gRNA 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.

Notice

➢*Slc35a3-205* may not be affected.

➢ The *Slc35a3* gene is located on the Chr3. 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）

集萃药康 GemPharmatech

Slc35a3 solute carrier family 35 (UDP-N-acetylglucosamine (UDP-GlcNAc) transporter), member 3 [Mus musculus (house mouse)]

Gene ID: 229782, updated on 13-Mar-2020

Summary

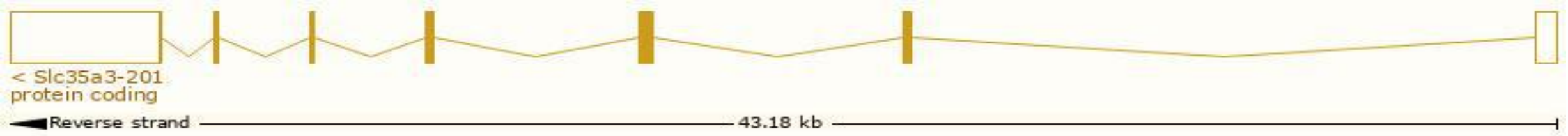
Official Symbol	Slc35a3 provided by MGI
Official Full Name	solute carrier family 35 (UDP-N-acetylglucosamine (UDP-GlcNAc) transporter), member 3 provided by MGI
Primary source	MGI:MGI:1917648
See related	Ensembl:ENSMUSG00000027957
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2310050P13Rik
Expression	Ubiquitous expression in large intestine adult (RPKM 5.1), colon adult (RPKM 4.5) and 28 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

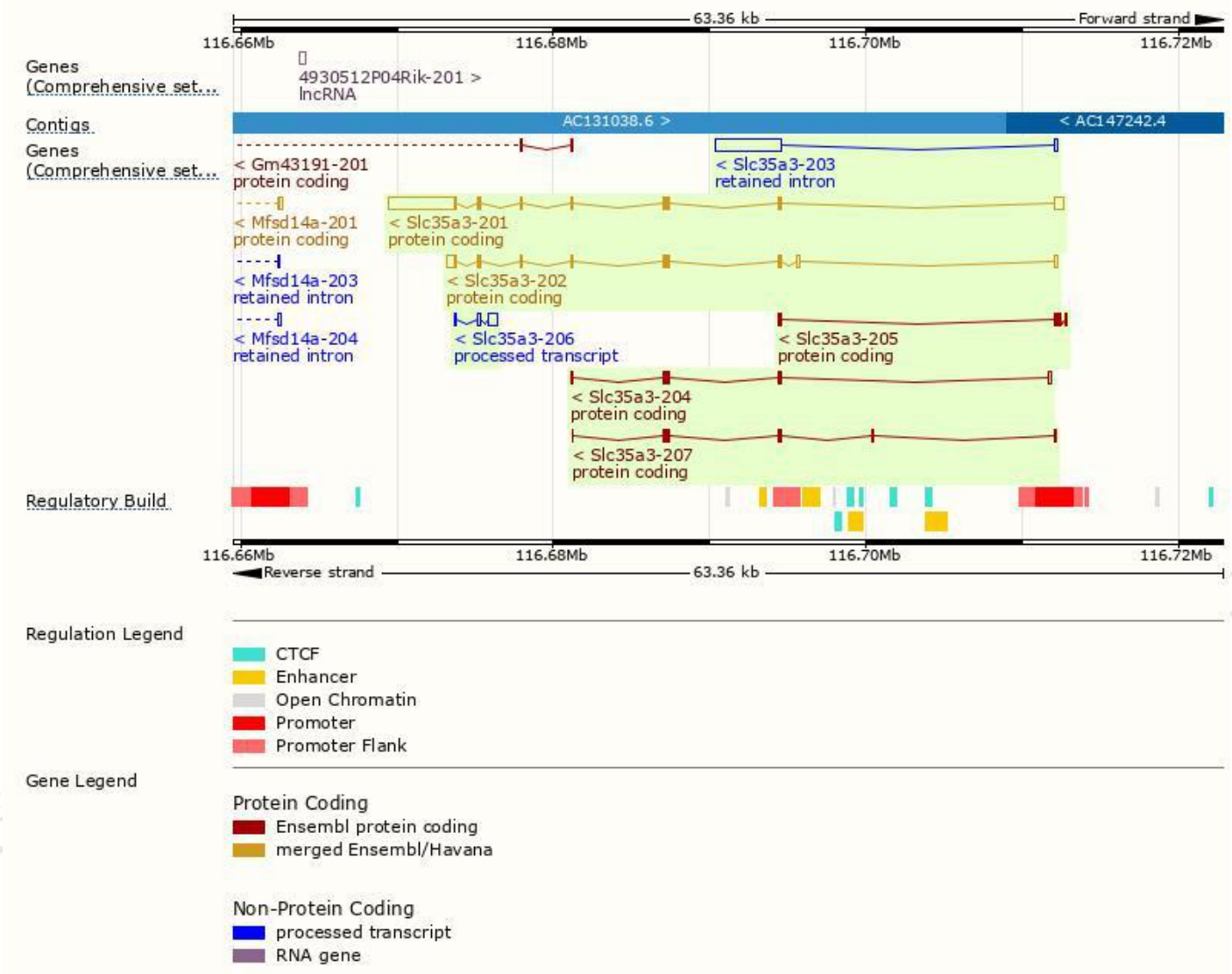
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Slc35a3-201	ENSMUST00000029569.8	5725	326aa	Protein coding	CCDS17791	Q8R1T4	TSL:1 GENCODE basic APPRIS P1
Slc35a3-202	ENSMUST00000120120.7	1791	326aa	Protein coding	CCDS17791	Q8R1T4	TSL:1 GENCODE basic APPRIS P1
Slc35a3-204	ENSMUST00000153108.5	815	212aa	Protein coding	-	D3YXZ7	CDS 3' incomplete TSL:3
Slc35a3-207	ENSMUST00000196335.1	697	167aa	Protein coding	-	A0A0G2JDH8	CDS 3' incomplete TSL:3
Slc35a3-205	ENSMUST00000169530.1	657	202aa	Protein coding	-	E9Q3V2	CDS 3' incomplete TSL:5
Slc35a3-206	ENSMUST00000196331.1	751	No protein	Processed transcript	-	-	TSL:3
Slc35a3-203	ENSMUST00000131082.1	4424	No protein	Retained intron	-	-	TSL:1

The strategy is based on the design of *Slc35a3-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain

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

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