

St6galnac4 Cas9-KO Strategy

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Project Overview



Project Name

St6galnac4

Project type

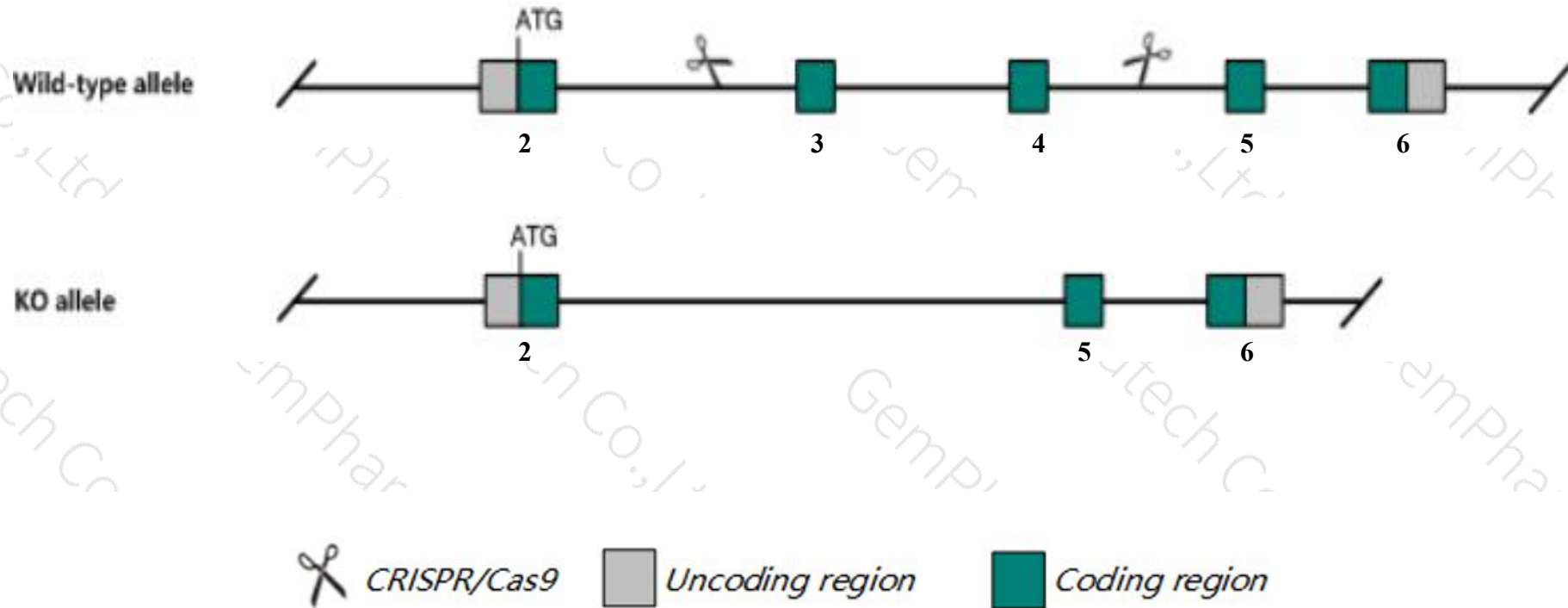
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *St6galnac4* gene. The schematic diagram is as follows:



- The *St6galnac4* gene has 5 transcripts. According to the structure of *St6galnac4* gene, exon3-exon4 of *St6galnac4-201* (ENSMUST00000102818.10) transcript is recommended as the knockout region. The region contains 599bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *St6galnac4* gene. The brief process is as follows: CRISPR/Cas9 sy

Notice

- *Gm23369* gene may be destroyed.
- The knockout region is about 5 kb away from the 5th end of the *St6galnac6* gene, and its effect is unknown.
- The *St6galnac4* gene is located on the Chr2. 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)

St6galnac4 ST6 (alpha-N-acetyl-neuraminy-2,3-beta-galactosyl-1,3)-N-acetylgalactosaminide alpha-2,6-sialyltransferase 4 [*Mus musculus* (house mouse)]

Gene ID: 20448, updated on 13-Mar-2020

Summary

Official Symbol	St6galnac4 provided by MGI
Official Full Name	ST6 (alpha-N-acetyl-neuraminy-2,3-beta-galactosyl-1,3)-N-acetylgalactosaminide alpha-2,6-sialyltransferase 4 provided by MGI
Primary source	MGI:MGI:1341894
See related	Ensembl:ENSMUSG00000079442
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	Siat7d; SIAT7-D; ST6GalNAcIV
Expression	Ubiquitous expression in colon adult (RPKM 18.1), cerebellum adult (RPKM 13.2) and 26 other tissues See more
Orthologs	human all

Genomic context

Location: 2; 2 B

Exon count: 6

See St6galnac4 in [Genome Data Viewer](#)

Transcript information (Ensembl)

The gene has 5 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
St6galnac4-201	ENSMUST00000102818.10	3626	302aa	Protein coding	CCDS15921	Q8C3J2	TSL:1 GENCODE basic APPRIS is a system to annotate alternatively spliced transcripts based on a range of computational methods to identify the most functionally important transcript(s) of a gene. APPRIS P1
St6galnac4-204	ENSMUST00000179989.1	2826	302aa	Protein coding	CCDS15921	Q8C3J2	TSL:1 GENCODE basic APPRIS is a system to annotate alternatively spliced transcripts based on a range of computational methods to identify the most functionally important transcript(s) of a gene. APPRIS P1
St6galnac4-203	ENSMUST00000146557.1	467	47aa	Nonsense mediated decay	-	A0A0A6YVT0	CDS 5' incomplete TSL:3
St6galnac4-205	ENSMUST00000192934.1	3999	No protein	Retained intron	-	-	TSL:1
St6galnac4-202	ENSMUST00000123080.6	1015	No protein	Retained intron	-	-	TSL:1

The strategy is based on the design of *St6galnac4-201* transcript, The transcription is shown below



Protein domain



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

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