

Gata5 Cas9-KO Strategy

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Project Overview

Project Name

Gata5

Project type

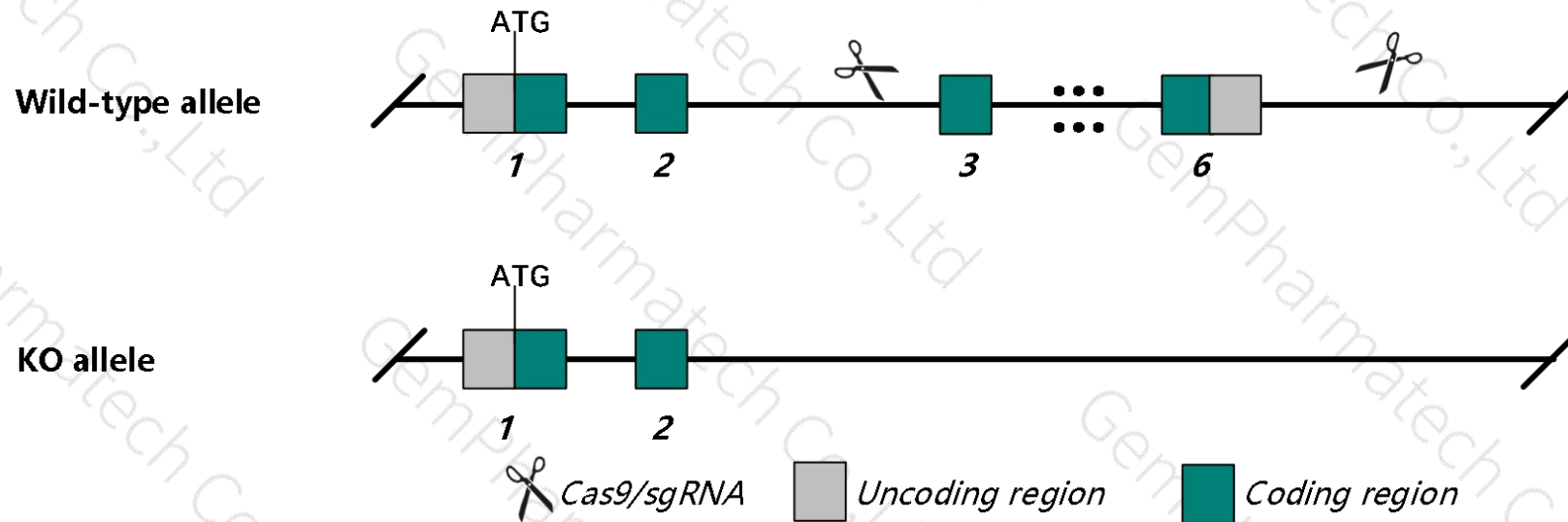
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gata5* gene. The schematic diagram is as follows:



- The *Gata5* gene has 1 transcript. According to the structure of *Gata5* gene, exon3-exon6 of *Gata5-201* (ENSMUST00000015771.2) transcript is recommended as the knockout region. The region contains most of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Gata5* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Male mice homozygous for disruptions in this gene are viable and fertile and appear to be normal. Females, on the other hand, have abnormalities of the external genitalia, most apparently reduced distance between anus and vagina, and experience reduced fertility due to vaginal tract obstructions.
- Some amino acids will remain at the N-terminus and some functions may be retained.
- The *Gata5* 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)

Gata5 GATA binding protein 5 [*Mus musculus* (house mouse)]

Gene ID: 14464, updated on 10-Oct-2019

Summary

Official Symbol	Gata5 provided by MGI
Official Full Name	GATA binding protein 5 provided by MGI
Primary source	MGI:MGI:109497
See related	Ensembl:ENSMUSG00000015627
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
Expression	Biased expression in small intestine adult (RPKM 33.7), duodenum adult (RPKM 29.2) and 4 other tissues See more
Orthologs	human all

Genomic context

Location: 2 H4; 2 102.85 cM

Exon count: 7

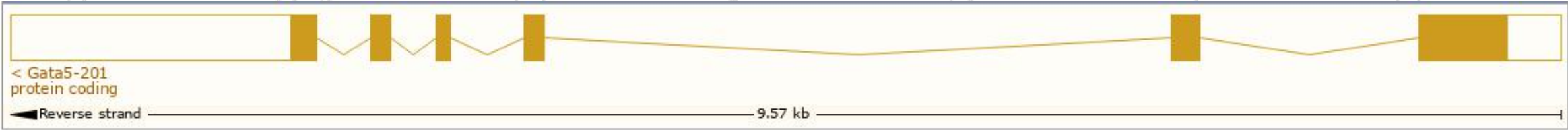
[See Gata5 in Genome Data Viewer](#)

Transcript information (Ensembl)

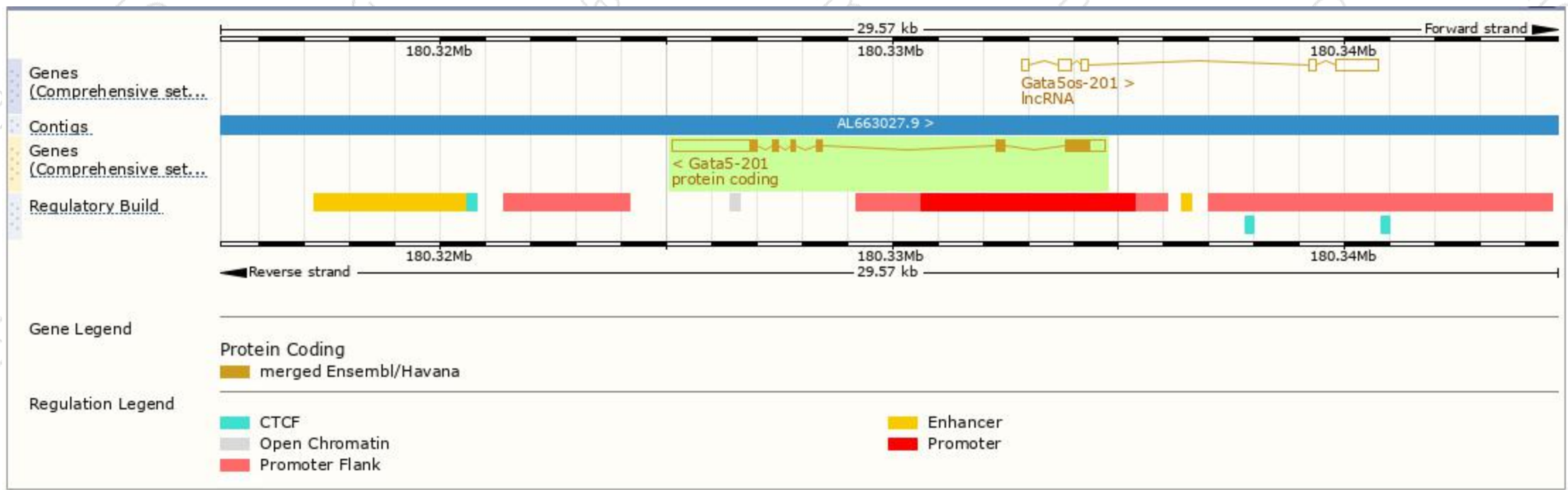
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Gata5-201	ENSMUST00000015771.2	3277	404aa	Protein coding	CCDS17175	P97489	TSL:1 GENCODE basic APPRIS P1

The strategy is based on the design of *Gata5-201* transcript, The transcription is shown below



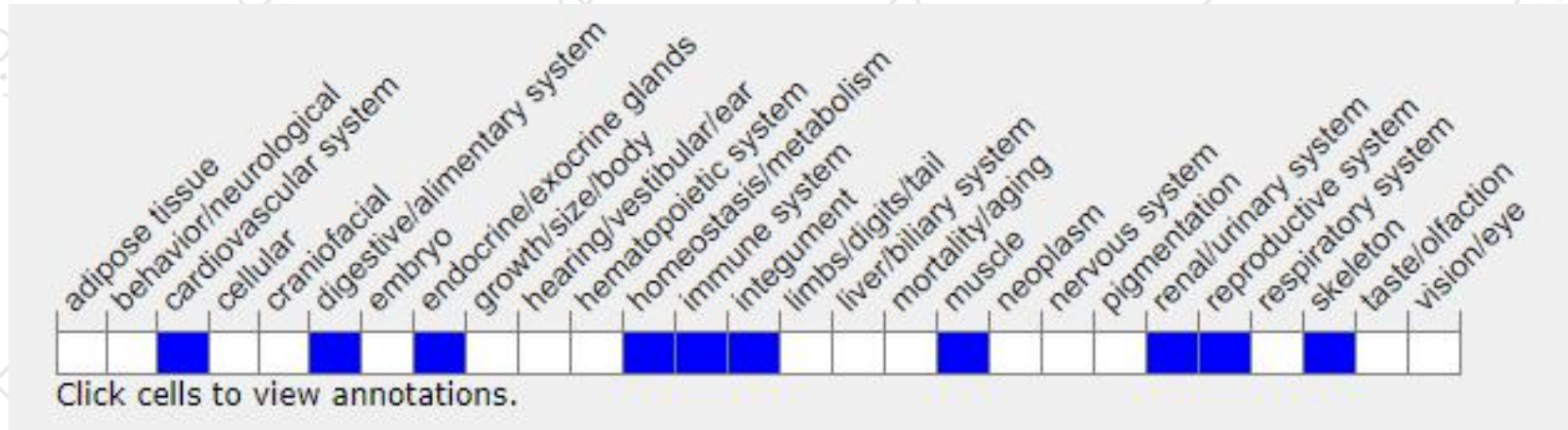
Genomic location distribution



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/>).

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

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