

Ogt Cas9-KO Strategy

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Project Overview

Project Name

Ogt

Project type

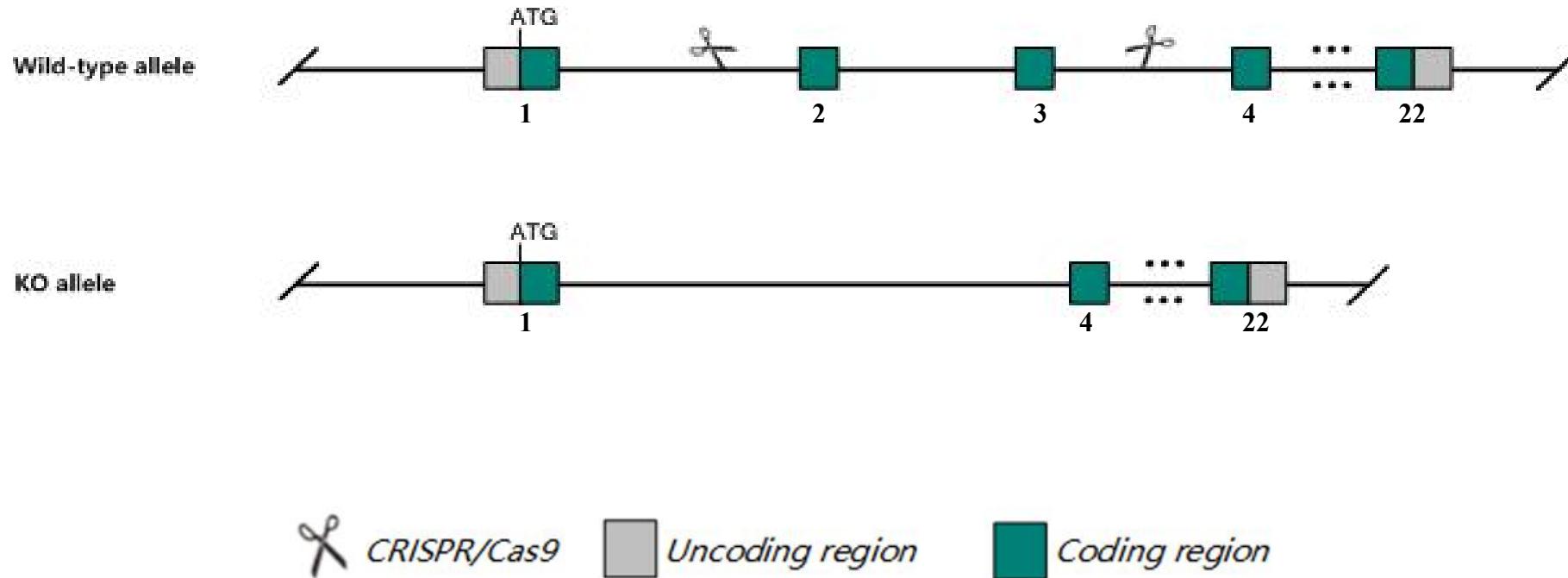
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



The *Ogt* gene has 7 transcripts. According to the structure of *Ogt* gene, exon2-exon3 of *Ogt-201* (ENSMUST00000044475.4) transcript is recommended as the knockout region. The region contains 425bp coding sequence. Knock out the region will result in disruption of protein function.

In this project we use CRISPR/Cas9 technology to modify *Ogt* gene. The brief process is as follows: CRISPR/Cas9 system w

According to the existing MGI data, Conditional deletion of this gene results in cell death in hemizygous and homozygous cells. Following germline conditional deletion only females inheriting the deletion paternally survive.

The *Ogt* 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.

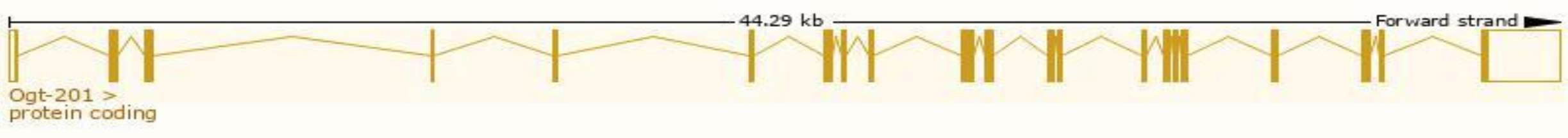
This Strategy is designed based on genetic information in existing databases. Due to the complexity of biological processes, all risk of the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Transcript information Ensembl

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

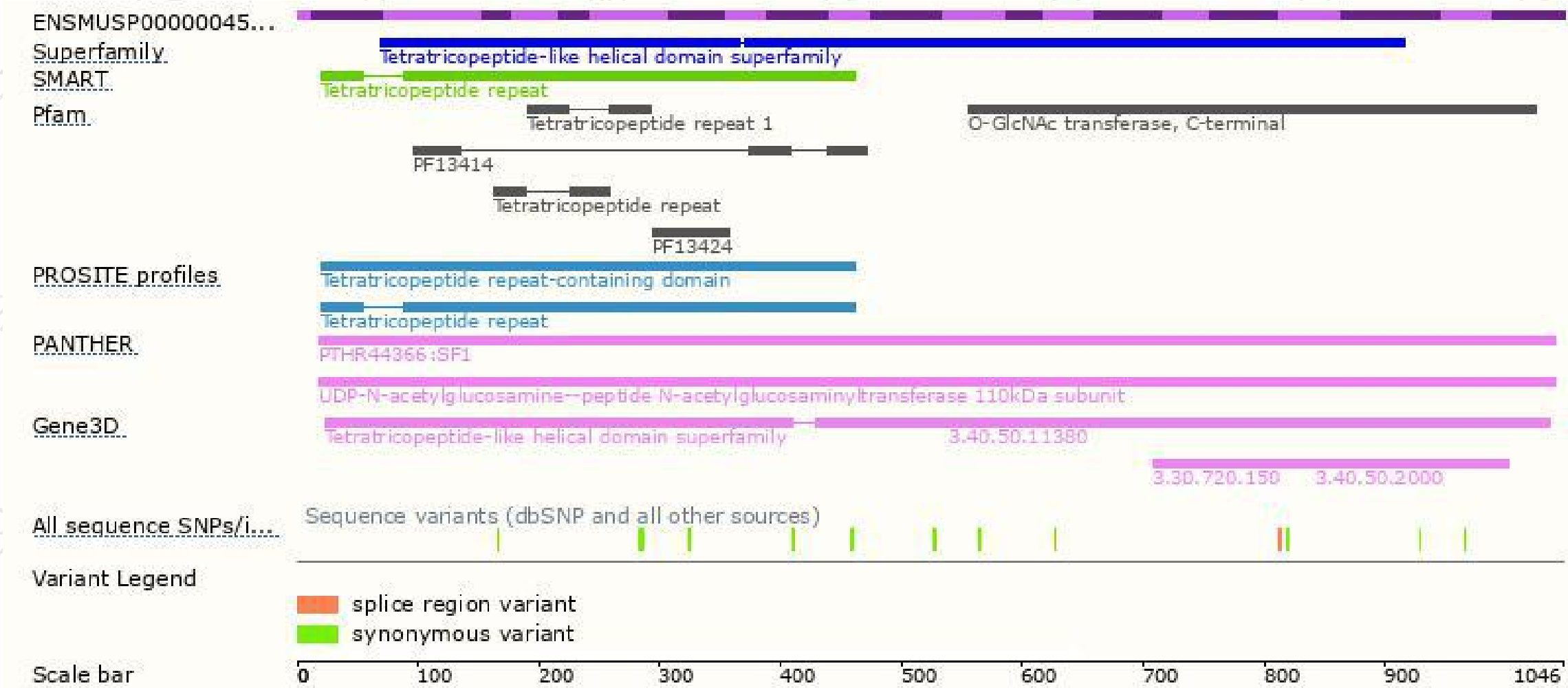
| Name | Transcript ID | bp | Protein | Biotype | CCDS | UniProt | Flags |
|---------|--------------------------------------|------|------------------------|-----------------|---------------------------|------------------------|----------------------------------|
| Ogt-201 | ENSMUST00000044475.4 | 5384 | 1046aa | Protein coding | CCDS30318 | Q8CGY8 | TSL:1 GENCODE basic APPRIS P3 |
| Ogt-202 | ENSMUST00000119299.7 | 3840 | 1036aa | Protein coding | CCDS72415 | Q8CGY8 | TSL:5 GENCODE basic APPRIS ALT 1 |
| Ogt-204 | ENSMUST00000150161.7 | 3087 | No protein | Retained intron | - | - | TSL:1 |
| Ogt-207 | ENSMUST00000155792.1 | 1333 | No protein | Retained intron | - | - | TSL:1 |
| Ogt-206 | ENSMUST00000155713.7 | 1317 | No protein | Retained intron | - | - | TSL:1 |
| Ogt-203 | ENSMUST00000147635.1 | 3521 | No protein | lncRNA | - | - | TSL:5 |
| Ogt-205 | ENSMUST00000153979.7 | 1066 | No protein | lncRNA | - | - | TSL:1 |

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

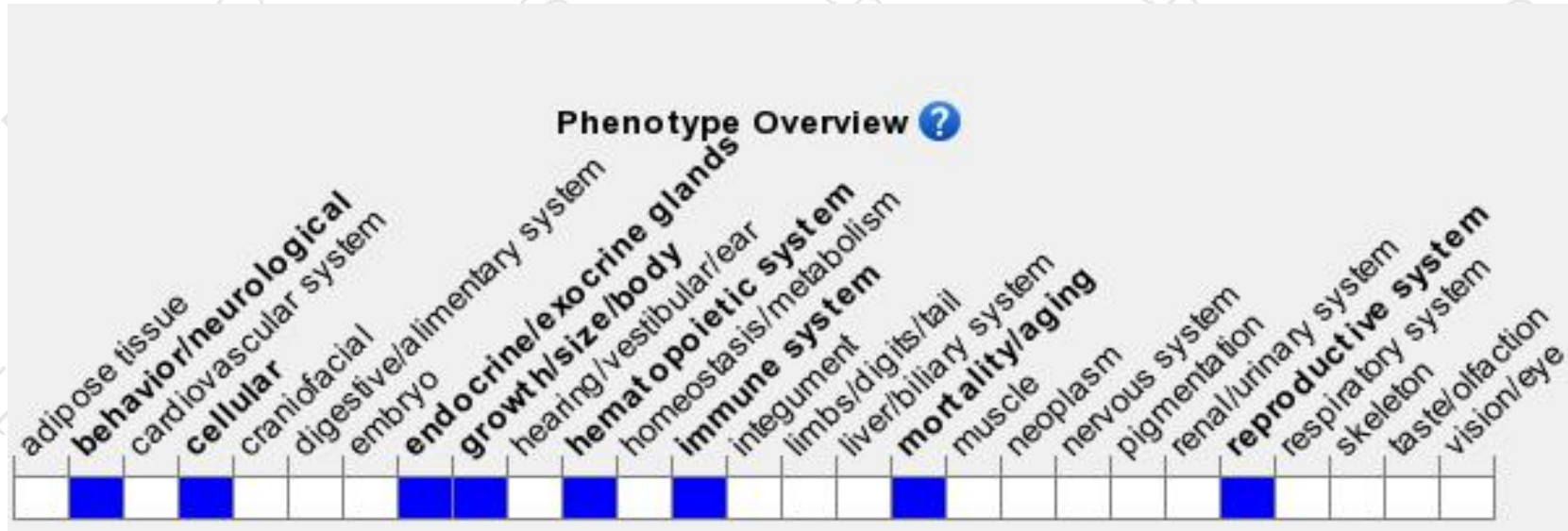


Genomic location distribution

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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