Glp2r Cas9-KO Strategy

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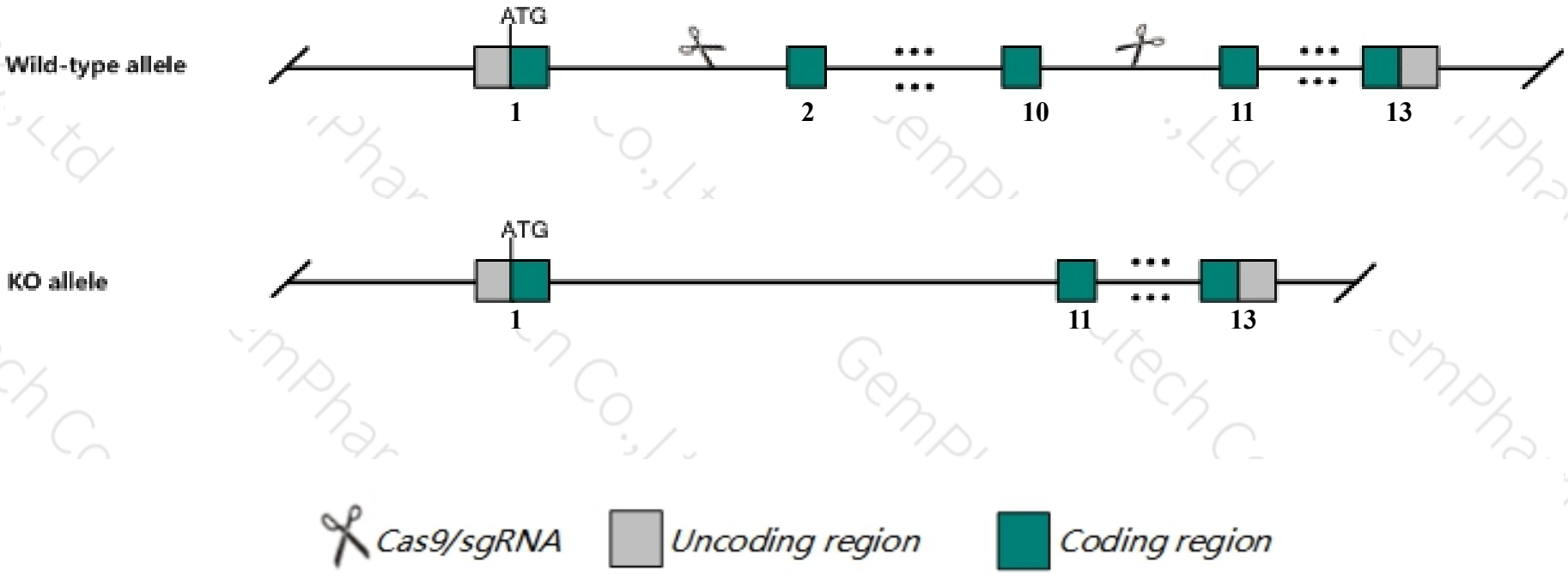
Project Overview

Project Name	***Glp2r***
Project type	**Cas9-KO**
Strain background	**C57BL/6J**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Glp2r* gene. The schematic diagram is as follows:



Technical routes

➢ The *Glp2r* gene has 2 transcripts. According to the structure of *Glp2r* gene, exon2-exon10 of *Glp2r-202* (ENSMUST00000051765.8) transcript is recommended as the knockout region.The region contains 965bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Glp2r* gene. The brief process is as follows: sgRNA was transcribed in vitro.Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6J 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/6J mice.

Notice

- According to the existing MGI data,Mice homozygous for a null mutation display defects in Paneth cell physiology, increased small bowel bacterial loads, and increased susceptibility to small bowel injury.

- The *Glp2r* gene is located on the Chr11. 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）

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Glp2r glucagon-like peptide 2 receptor [Mus musculus (house mouse)]

Gene ID: 93896, updated on 19-Mar-2019

Summary

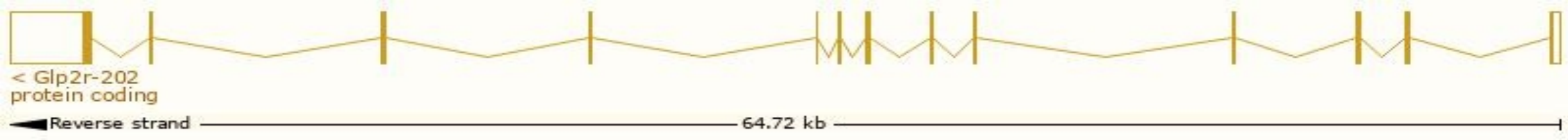
Official Symbol	Glp2r provided by MGI
Official Full Name	glucagon-like peptide 2 receptor provided by MGI
Primary source	MGI:MGI:2136733
See related	Ensembl:ENSMUSG00000049928
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9530092J08Rik, GLP-2
Expression	Biased expression in bladder adult (RPKM 2.5), colon adult (RPKM 1.1) and 10 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

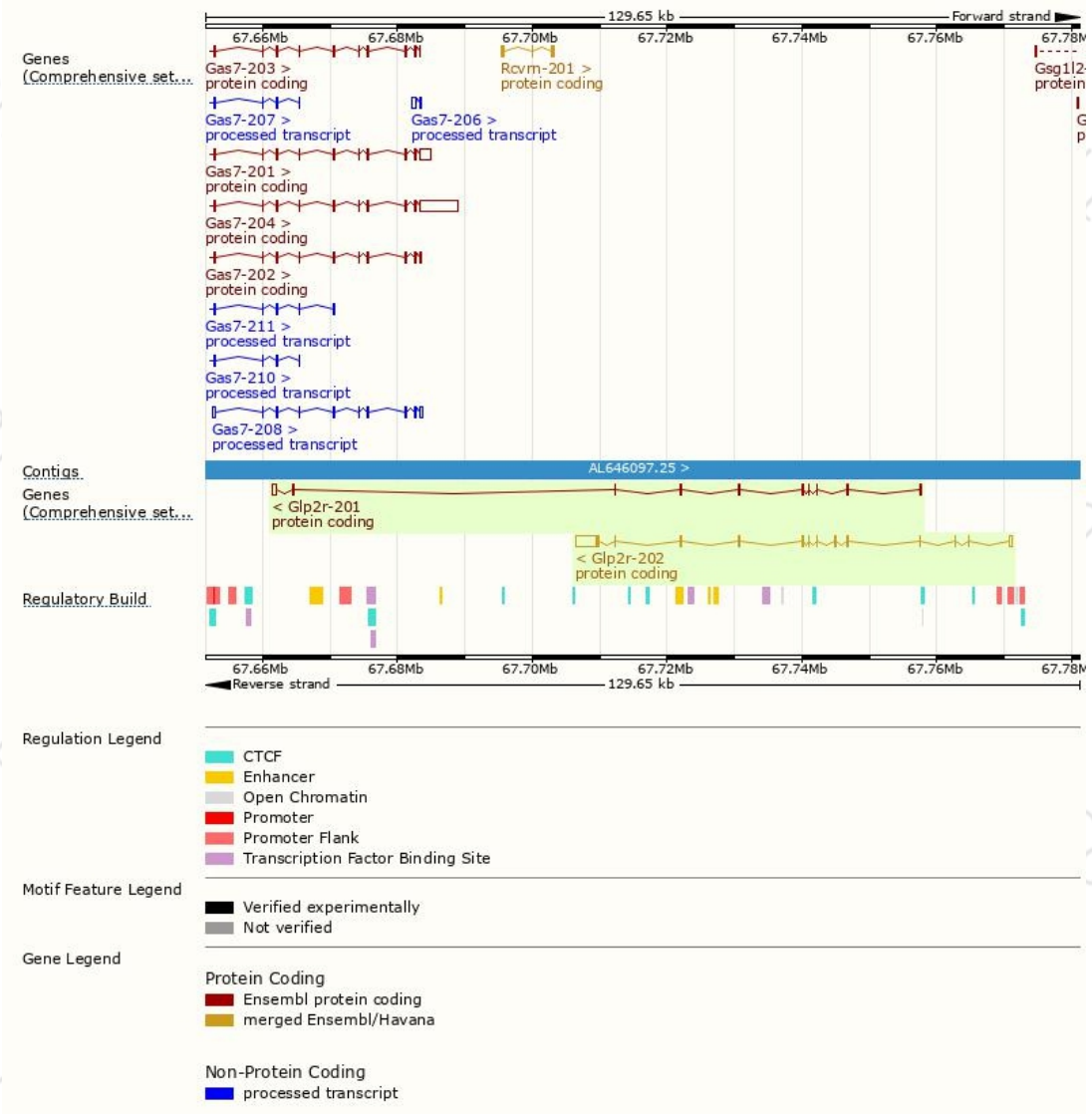
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Glp2r-202	ENSMUST00000051765.8	4873	512aa	Protein coding	CCDS24860	A0A158RFU9 Q5IXF8	TSL:1 GENCODE basic APPRIS P1
Glp2r-201	ENSMUST00000021289.9	1738	304aa	Protein coding	-	Q8BM22	TSL:1 GENCODE basic

The strategy is based on the design of *Glp2r-202* transcript,The transcription is shown below

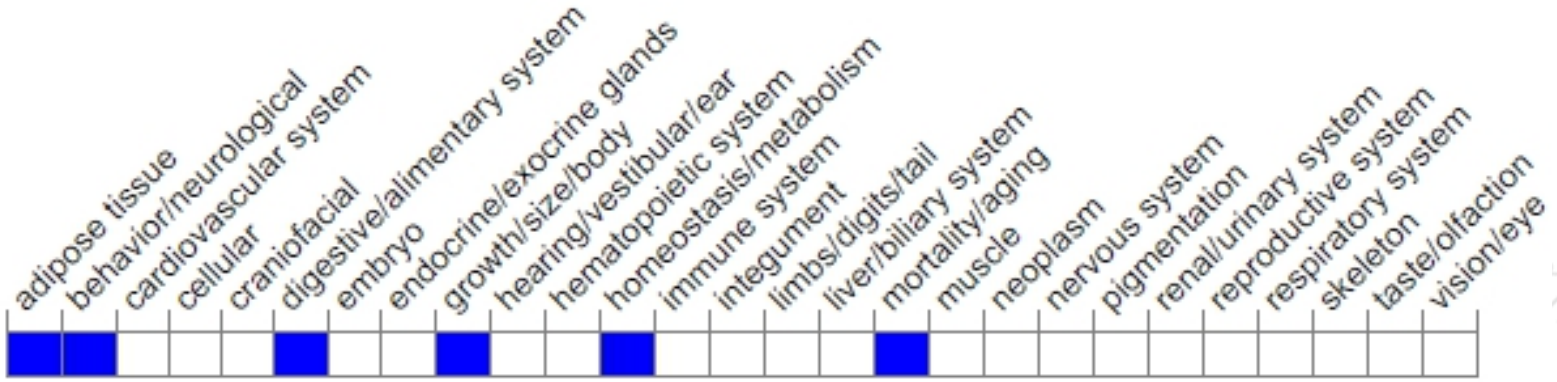


Genomic location distribution



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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