

***Gm11437-IRES-EGFP* cas9-ki Mouse Model Strategy**

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Project Overview

Project Name

Gm11437-IRES-EGFP

Project type

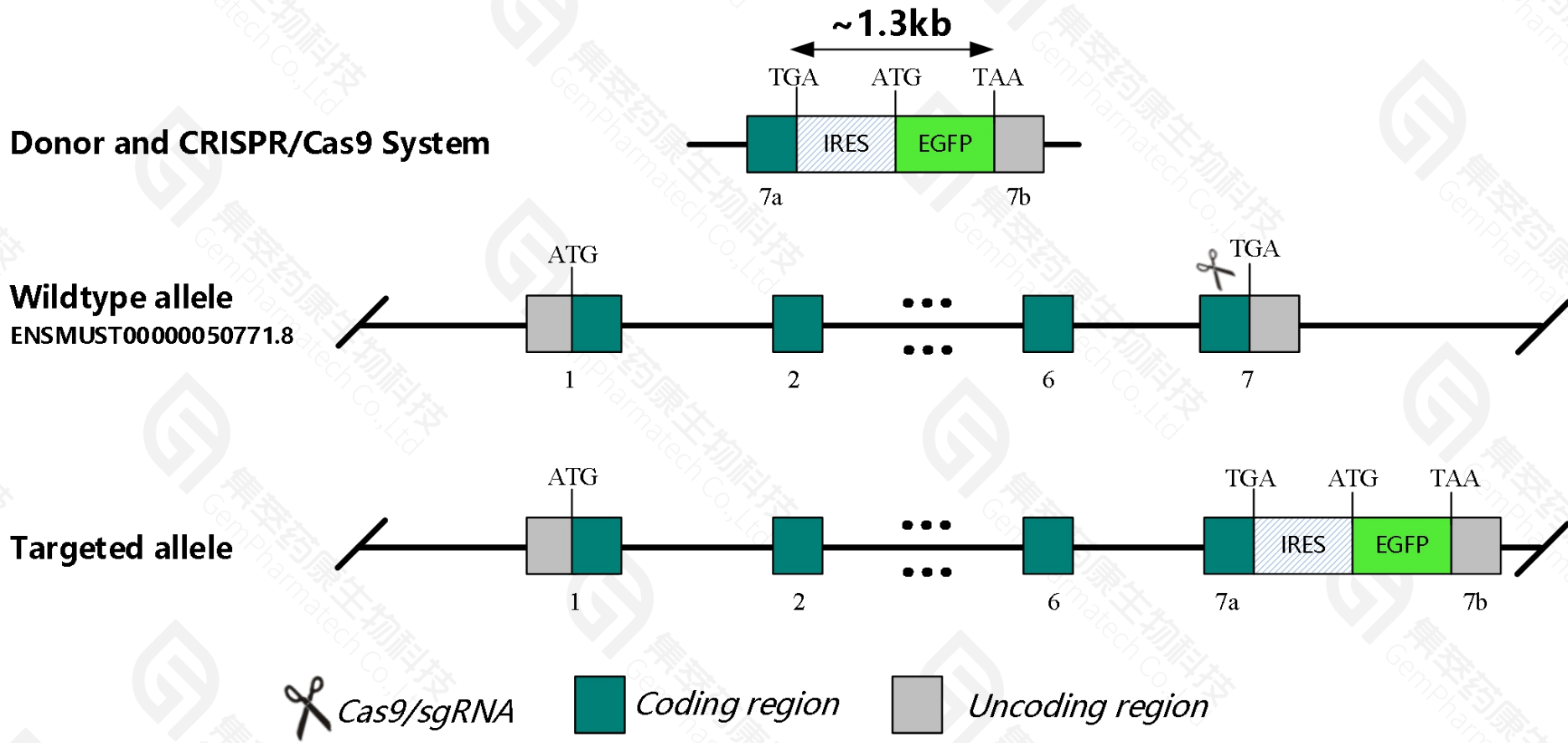
cas9-ki

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Gm11437* gene. The schematic diagram is as follows:



- The *Gm11437* gene has 1 transcript.
- According to the structure of *Gm11437* gene, the element *IRES-EGFP* will be inserted at the translation stop codon of *Gm11437*-201(ENSMUST00000050771.8), the length of inserted fragment is about 1.3kb.
- The mouse *Gm11437*-201 transcript contains 7 exons. The translation initiation site ATG is located at exon1, and the translation termination site TGA is located at exon7, encoding 290aa.
- In this project we use CRISPR/Cas9 technology to modify *Gm11437* gene. The brief process is as follows:sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA and Donor 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.

- *Gm11437* gene overlaps with the intron of *Acaca* gene, the effect of *Acaca* gene in this strategy is unknown. According to the existing MGI data, homozygous *Acaca* null mice display embryonic lethality before embryo turning with growth arrest at the egg cylinder stage.
- It is necessary to introduce 1-2 synonymous mutation in exon7.
- The IERS-linked genes will be transcribed together and then be translated two protein separately, but the downstream protein is lower than the upstream protein.
- The *Gm11437* gene is located on the Chr11. Please take the loci in consideration when breeding this knockin mice with other gene modified strains, if the other gene is also on Chr11, it may be extremely hard to get double gene positive homozygotes.
- The scheme is designed according to the genetic information in the existing database. Inserting a foreign gene between the 3'UTR and the gene coding region may affect the expression of endogenous and foreign genes. Due to the complexity of biological processes, it cannot be predicted completely at the present technology level.

Gene information (NCBI)

Gm11437 predicted gene 11437 [*Mus musculus* (house mouse)]

Gene ID: 628813, updated on 22-Apr-2021

Download Datasets

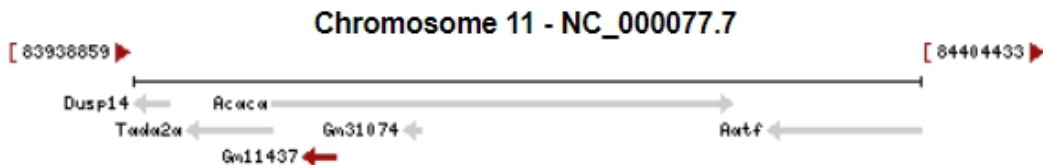
Summary

Official Symbol	Gm11437 provided by MGI
Official Full Name	predicted gene 11437 provided by MGI
Primary source	MGI:MGI:3650287
See related	Ensembl:ENSMUSG00000051452
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	AI463690
Expression	Biased expression in large intestine adult (RPKM 8.1), small intestine adult (RPKM 2.5) and 2 other tissues See more
Orthologs	human all

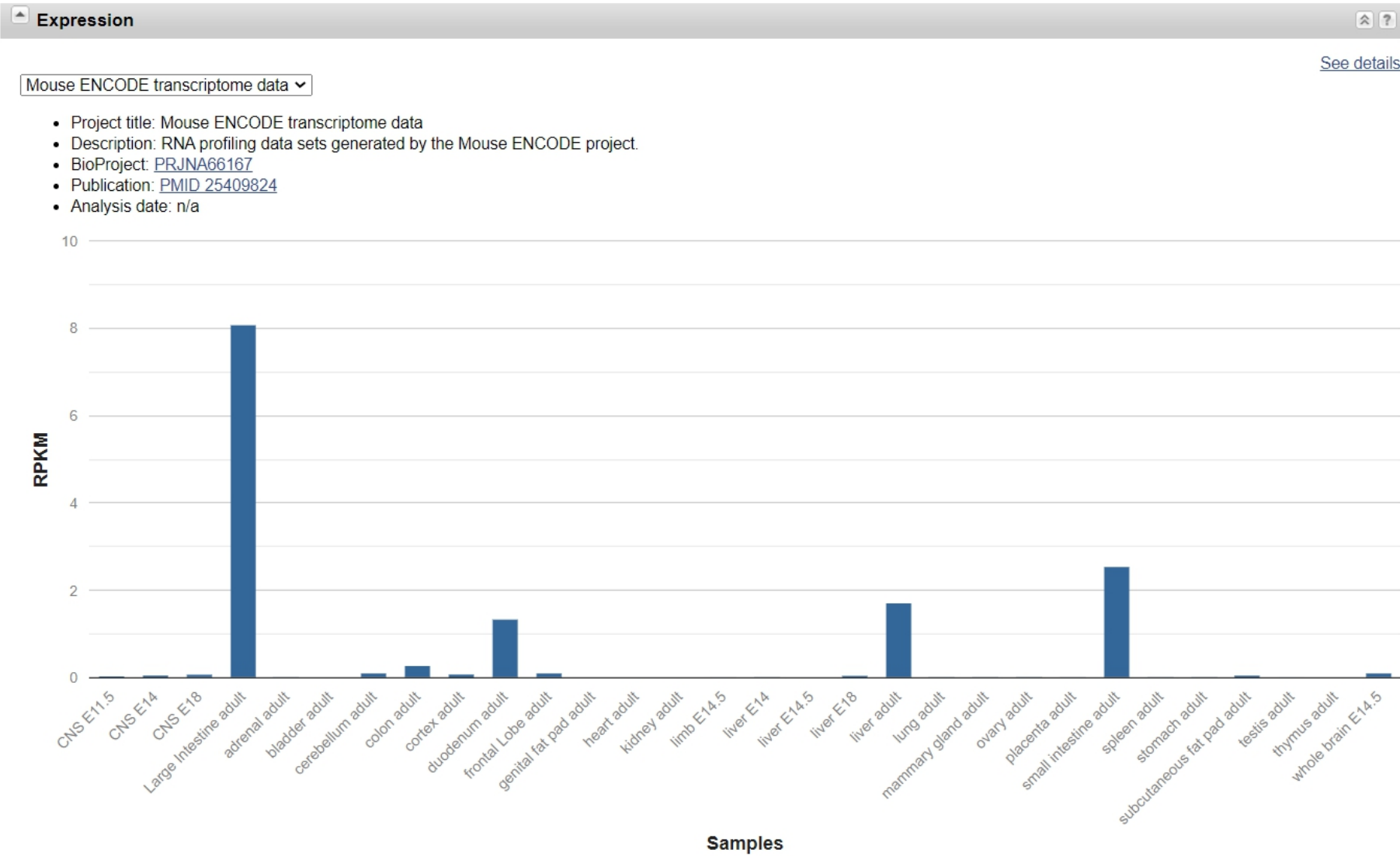
NEW

Try the new [Gene table](#)

Try the new [Transcript table](#)



Gene information (NCBI)

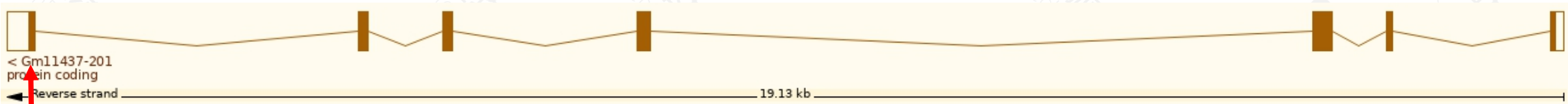


Transcript information (Ensembl)

The gene has 1 transcript, and all transcripts are shown below:

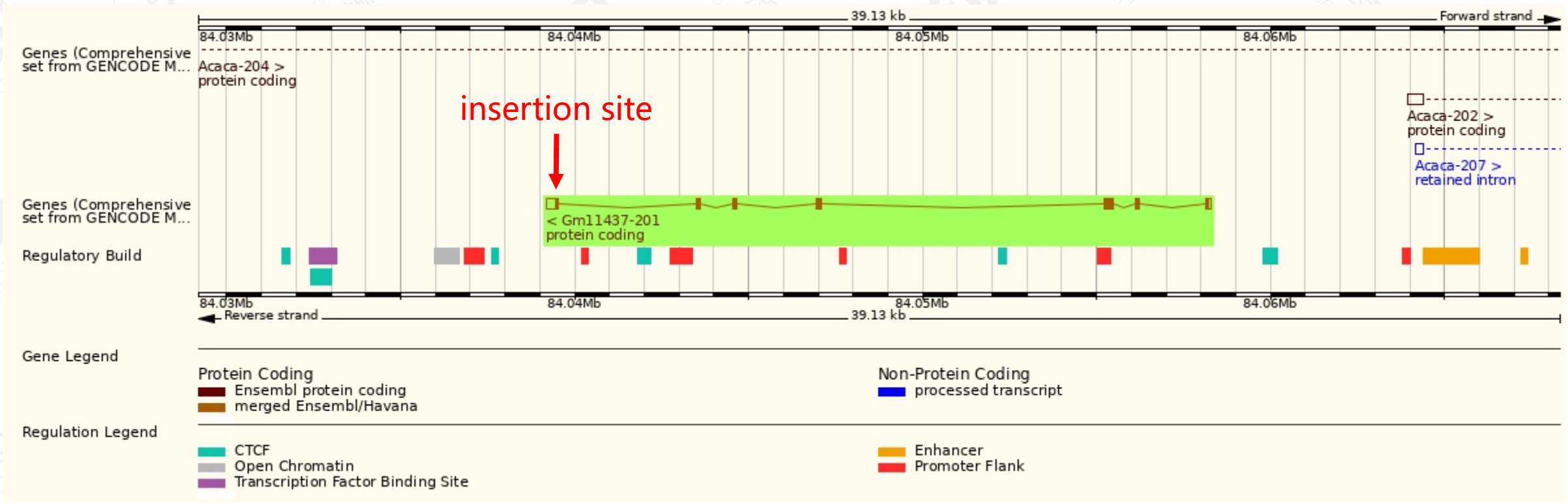
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt Match	Flags
Gm11437-201	ENSMUST00000050771.8	1239	290aa	Protein coding	CCDS25184	Q5QR91	TSL:1 Gencode basic APPRIS P1

The strategy is based on the design of *Gm11437-201* transcript,the transcription is shown below:



insertion site

Genomic location distribution



Protein domain

Protein domains for ENSMUSP00000056084.8



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