

Itga11 Cas9-KO Strategy

Designer:

Yanhua Shen

Reviewer:

Xueting Zhang

Design Date:

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Project Overview

Project Name

Itga11

Project type

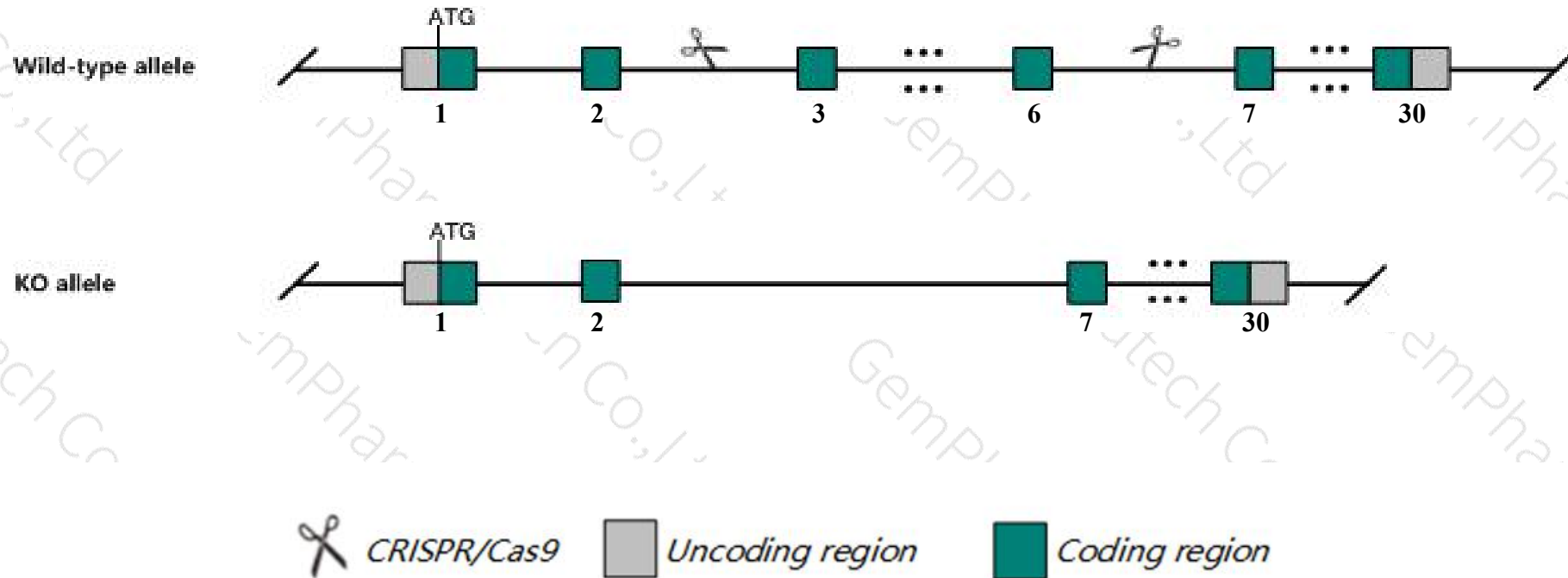
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Itga11* gene. The schematic diagram is as follows:



- The *Itga11* gene has 2 transcripts. According to the structure of *Itga11* gene, exon3-exon6 of *Itga11-201* (ENSMUST00000034774.8) transcript is recommended as the knockout region. The region contains 436bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Itga11* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a disruption of this gene display dwarfism, increased mortality with age, and defective incisors.
- The *Itga11* gene is located on the Chr9. 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)

Itga11 integrin alpha 11 [*Mus musculus* (house mouse)]

Gene ID: 319480, updated on 12-Aug-2019

Summary

Official Symbol	Itga11 provided by MGI
Official Full Name	integrin alpha 11 provided by MGI
Primary source	MGI:MGI:2442114
See related	Ensembl:ENSMUSG00000032243
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	4732459H24Rik
Expression	Broad expression in limb E14.5 (RPKM 7.7), bladder adult (RPKM 6.3) and 18 other tissues See more
Orthologs	human all

Genomic context

Location: 9; 9 B

Exon count: 30

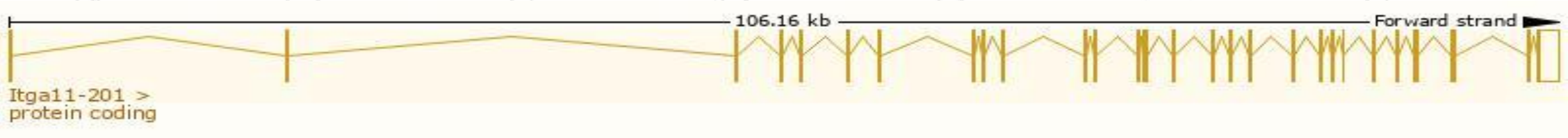
See Itga11 in [Genome Data Viewer](#)

Transcript information (Ensembl)

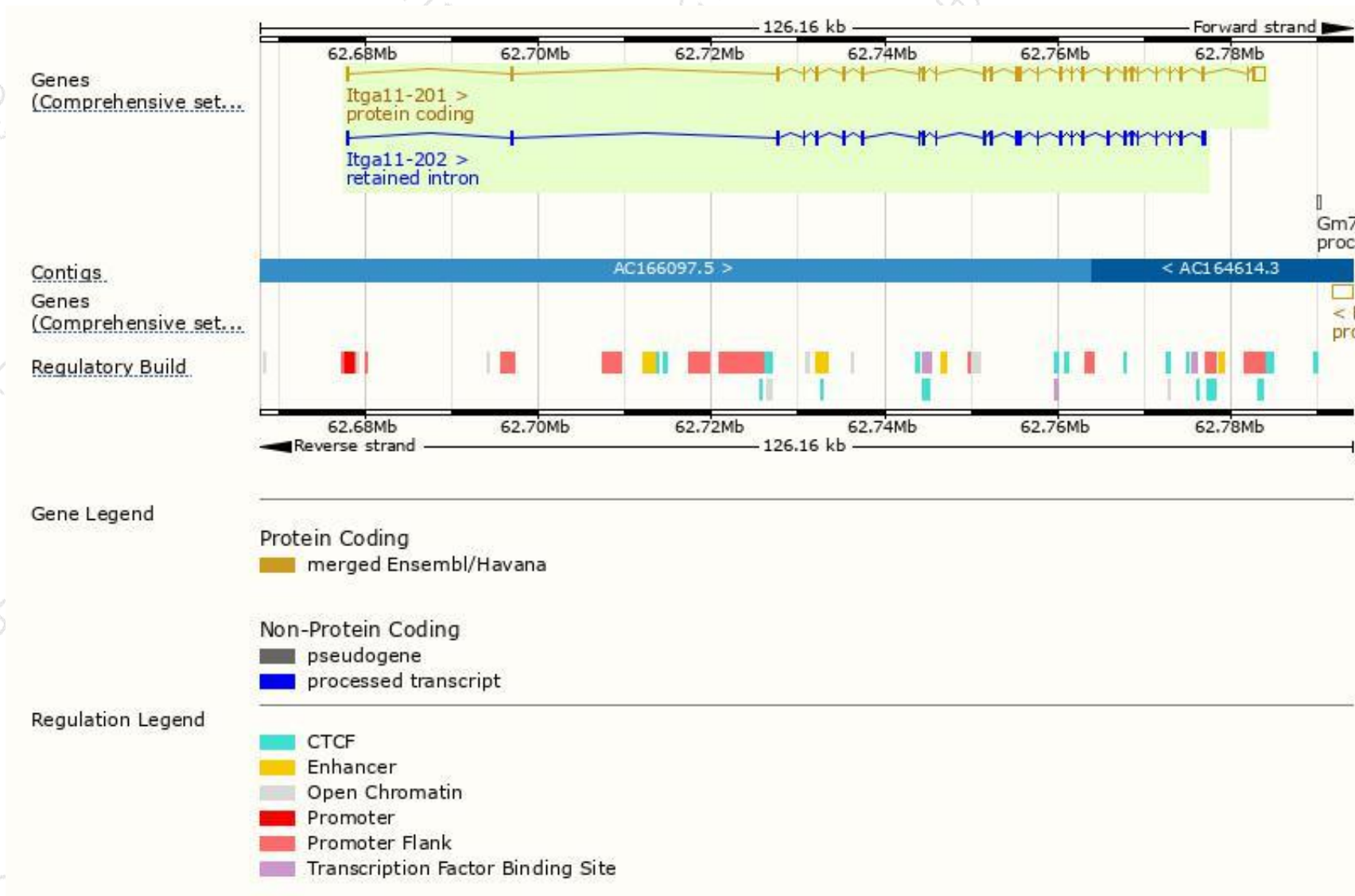
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Itga11-201	ENSMUST00000034774.8	4969	1188aa	Protein coding	CCDS23265	A0A0B4J1F0	TSL:1 GENCODE basic APPRIS P1
Itga11-202	ENSMUST00000159012.1	3628	No protein	Retained intron	-	-	TSL:5

The strategy is based on the design of *Itga11-201* transcript,The transcription is shown below



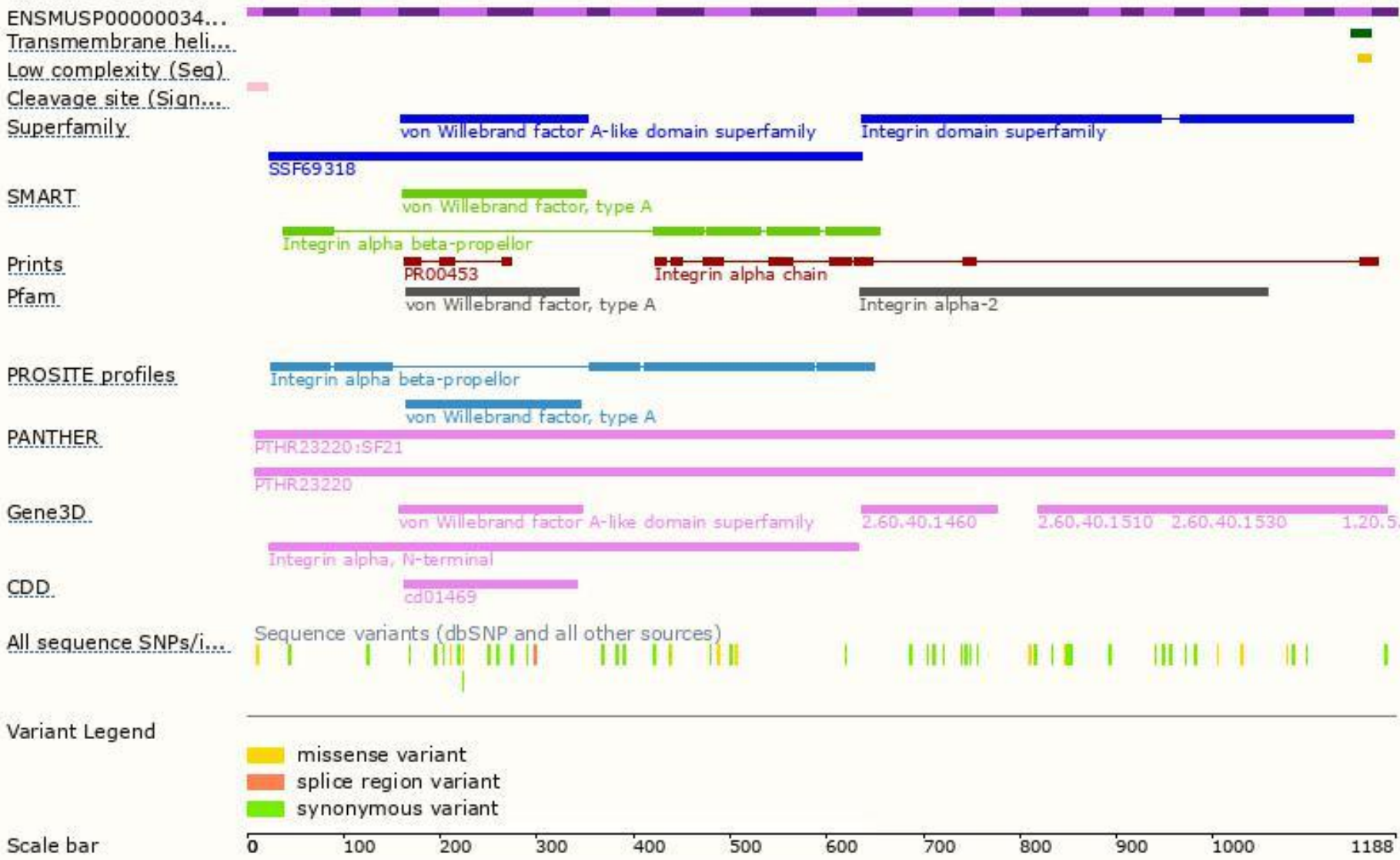
Genomic location distribution



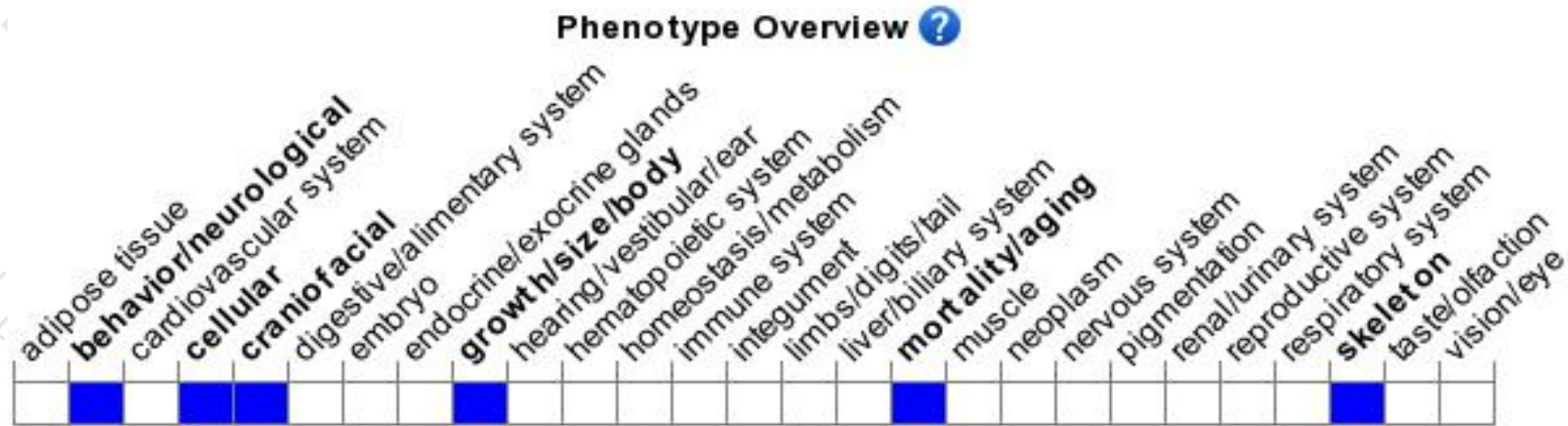
Protein domain



集萃药康
GemPharmatech



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.

Tel: 400-9660890

