

Adgre1 Cas9-KO Strategy

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Project Overview

Project Name

Adgre1

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Adgre1* gene. The schematic diagram is as follows:



- The *Adgre1* gene has 5 transcripts. According to the structure of *Adgre1* gene, exon2-exon10 of *Adgre1*-202 (ENSMUST00000086763.12) transcript is recommended as the knockout region. The region contains 1160bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Adgre1* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Homozygous null mice fail to develop peripheral tolerance after inoculation with antigen because of a lack of efferent regulatory T cell development.
- The *Adgre1* gene is located on the Chr17. 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)

Adgre1 adhesion G protein-coupled receptor E1 [Mus musculus (house mouse)]

Gene ID: 13733, updated on 19-Mar-2019

Summary



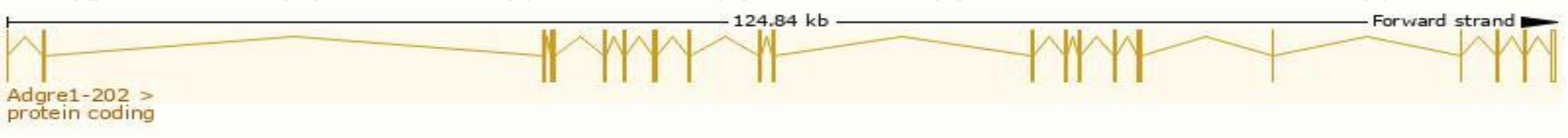
Official Symbol	Adgre1 provided by MGI
Official Full Name	adhesion G protein-coupled receptor E1 provided by MGI
Primary source	MGI:MGI:106912
See related	Ensembl:ENSMUSG000000004730
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	DD7A5-7, EGF-TM7, Emr1, F4/80, Gpf480, Ly71, TM7LN3
Expression	Broad expression in spleen adult (RPKM 13.7), mammary gland adult (RPKM 11.5) and 27 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

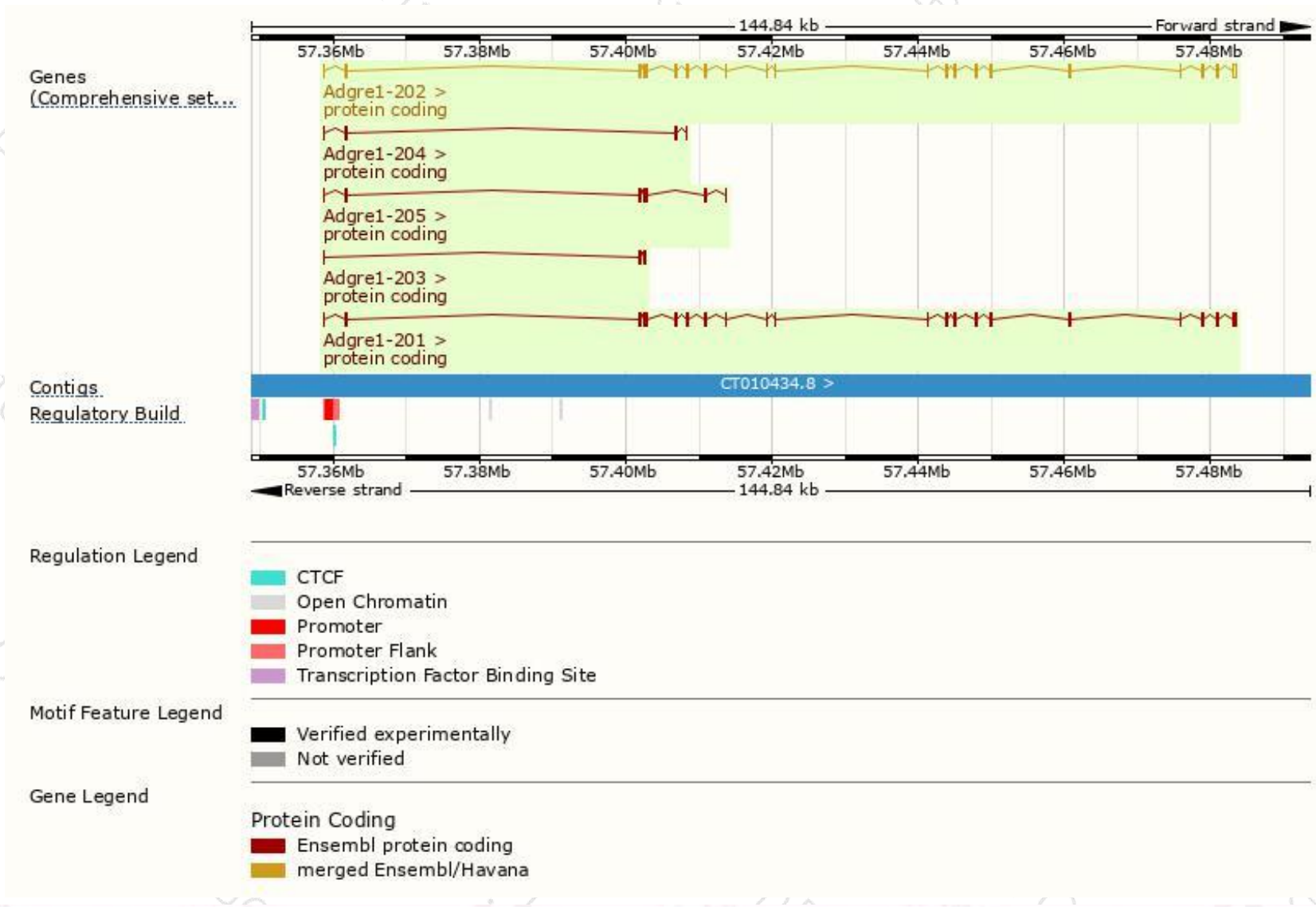
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Adgre1-202	ENSMUST00000086763.12	3238	931aa	Protein coding	CCDS50160	Q3U9R0 Q61549	TSL:1 GENCODE basic APPRIS P1
Adgre1-201	ENSMUST00000004850.7	3124	931aa	Protein coding	CCDS50160	Q3U9R0 Q61549	TSL:1 GENCODE basic APPRIS P1
Adgre1-205	ENSMUST00000233840.1	917	296aa	Protein coding	-	A0A3B2WB94	CDS 3' incomplete
Adgre1-203	ENSMUST00000232808.1	402	125aa	Protein coding	-	A0A3B2W7X0	CDS 3' incomplete
Adgre1-204	ENSMUST00000233376.1	342	104aa	Protein coding	-	A0A3B2W8A7	CDS 3' incomplete

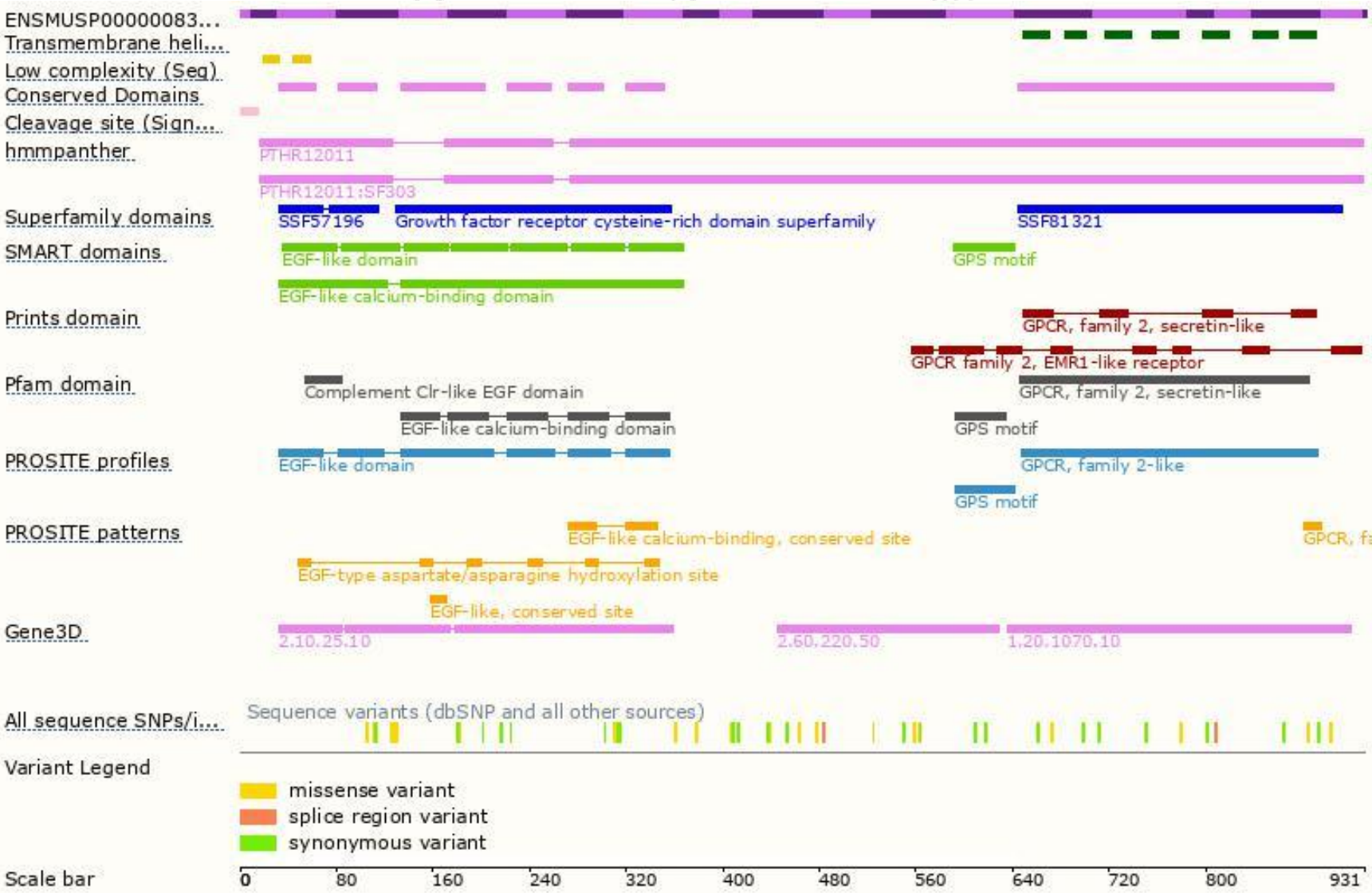
The strategy is based on the design of *Adgre1-202* transcript,The transcription is shown below



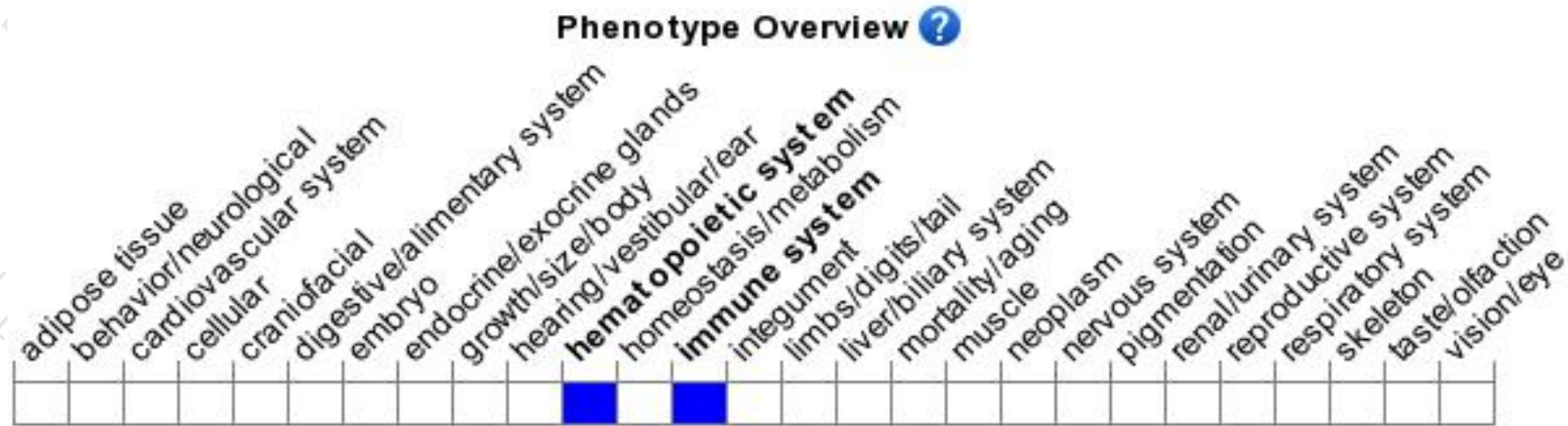
Genomic location distribution



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/>).

According to the existing MGI data, Homozygous null mice fail to develop peripheral tolerance after inoculation with antigen because of a lack of efferent regulatory T cell development.

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

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