

Atp11c Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Atp11c

Project type

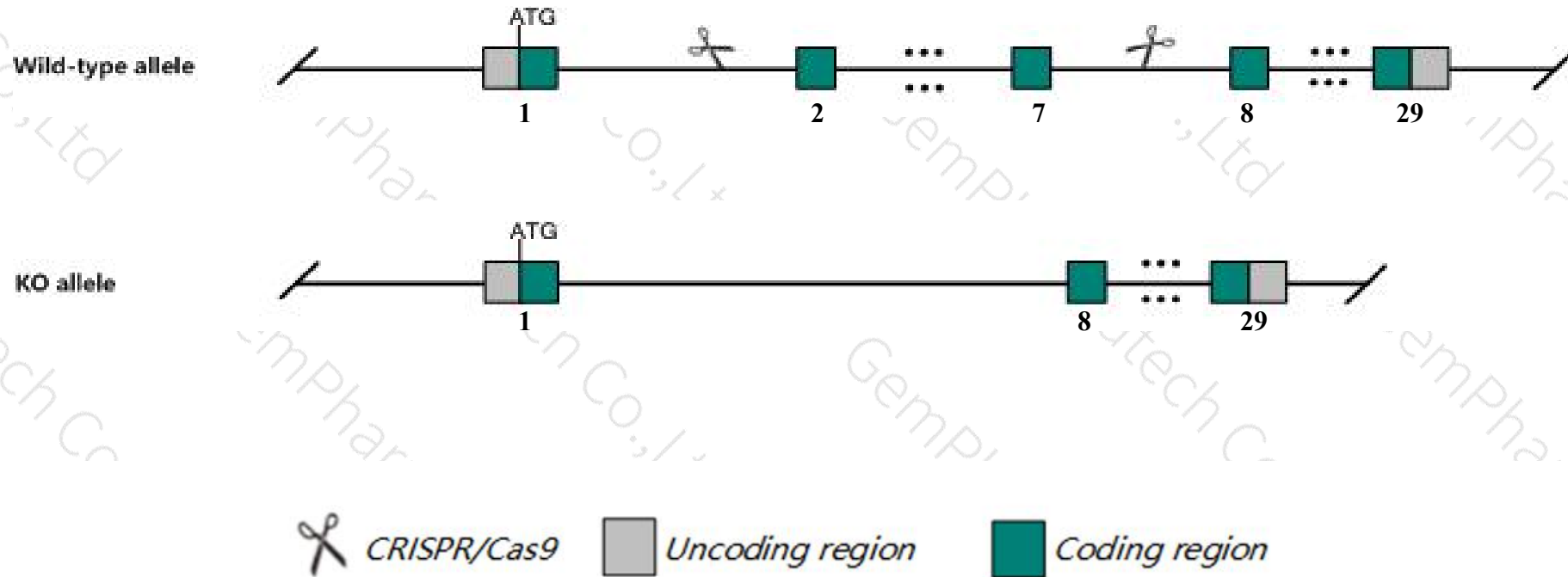
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Atp11c* gene. The schematic diagram is as follows:



- The *Atp11c* gene has 5 transcripts. According to the structure of *Atp11c* gene, exon2-exon7 of *Atp11c-202* (ENSMUST00000101527.2) transcript is recommended as the knockout region. The region contains 632bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Atp11c* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous or hemizygous for an ENU mutation exhibit decreased B cells associated with arrested adult B cell lymphopoiesis.
- The *Atp11c* 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.

Gene information (NCBI)

Atp11c ATPase, class VI, type 11C [Mus musculus (house mouse)]

Gene ID: 320940, updated on 5-Feb-2019

Summary



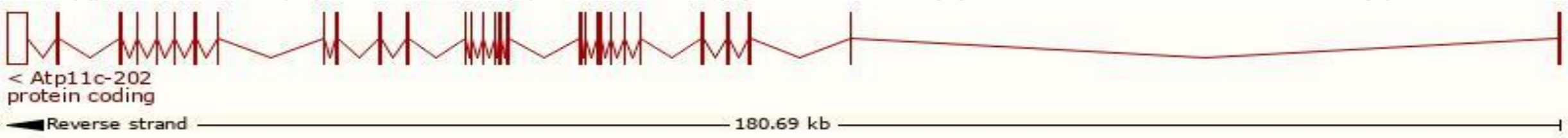
Official Symbol	Atp11c provided by MGI
Official Full Name	ATPase, class VI, type 11C provided by MGI
Primary source	MGI:MGI:1859661
See related	Ensembl:ENSMUSG00000062949
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	A330005H02Rik, AI315324, Ig
Expression	Broad expression in CNS E14 (RPKM 7.2), whole brain E14.5 (RPKM 6.7) and 25 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

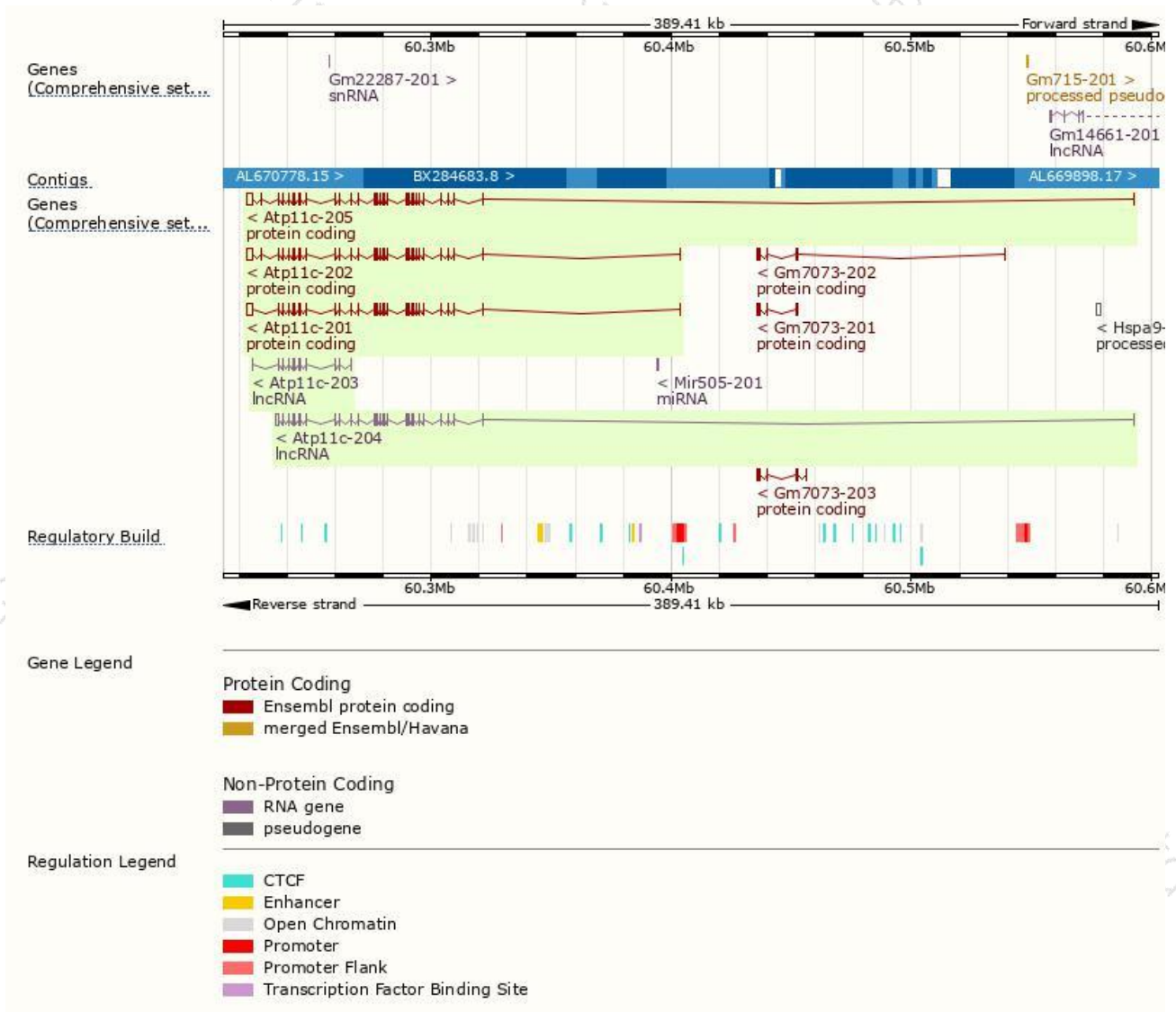
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Atp11c-202	ENSMUST00000101527.2	6044	1129aa	Protein coding	CCDS40988	Q9QZW0	TSL:1 GENCODE basic APPRIS P4
Atp11c-201	ENSMUST00000033480.12	5939	1116aa	Protein coding	CCDS40987	E9QKK8	TSL:5 GENCODE basic APPRIS ALT2
Atp11c-205	ENSMUST00000154051.7	6039	1129aa	Protein coding	-	F6Q8D3	TSL:5 GENCODE basic
Atp11c-204	ENSMUST00000138569.1	4475	No protein	lncRNA	-	-	TSL:5
Atp11c-203	ENSMUST00000133295.7	1154	No protein	lncRNA	-	-	TSL:1

The strategy is based on the design of *Atp11c-202* transcript,The transcription is shown below



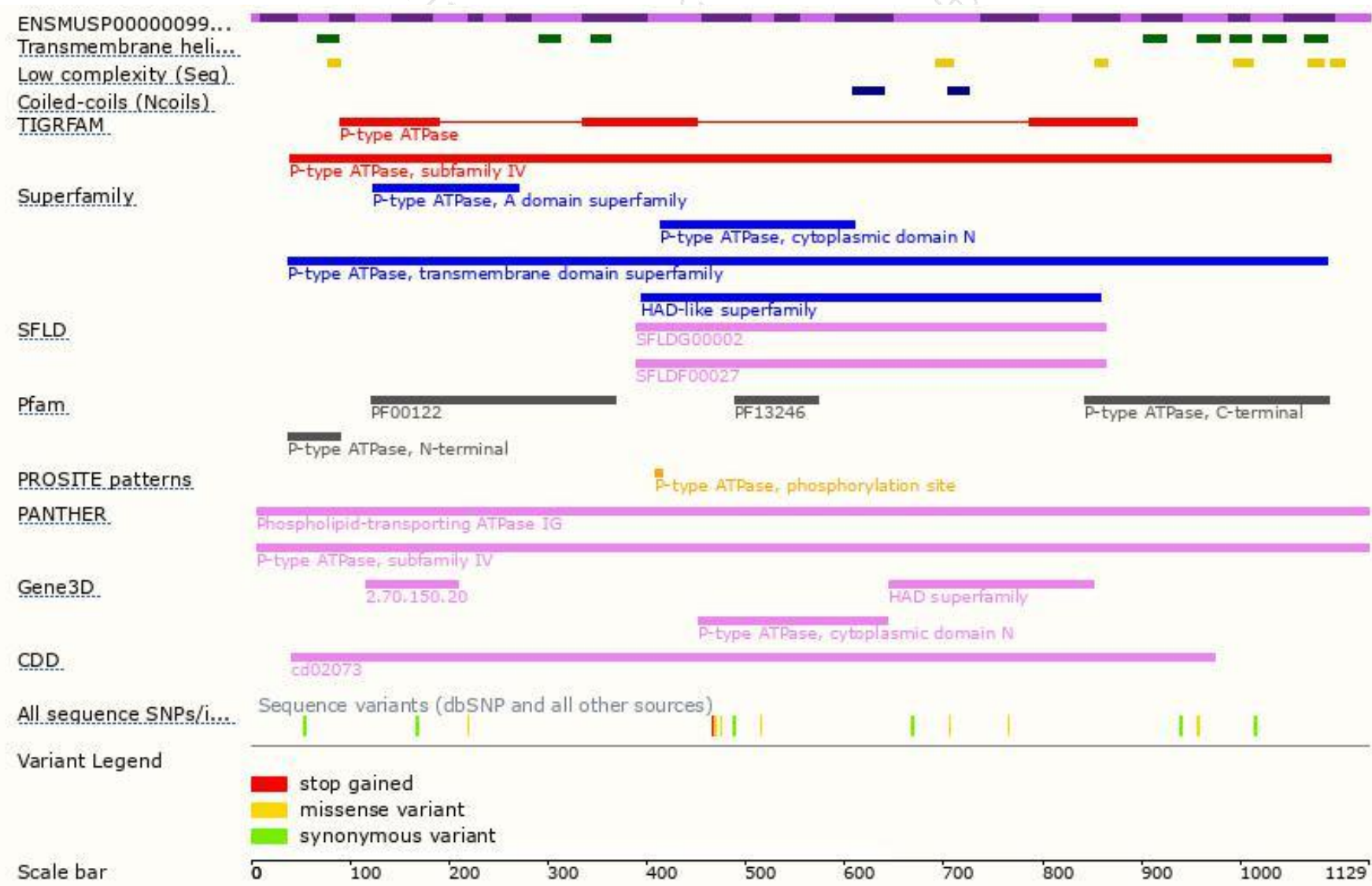
Genomic location distribution



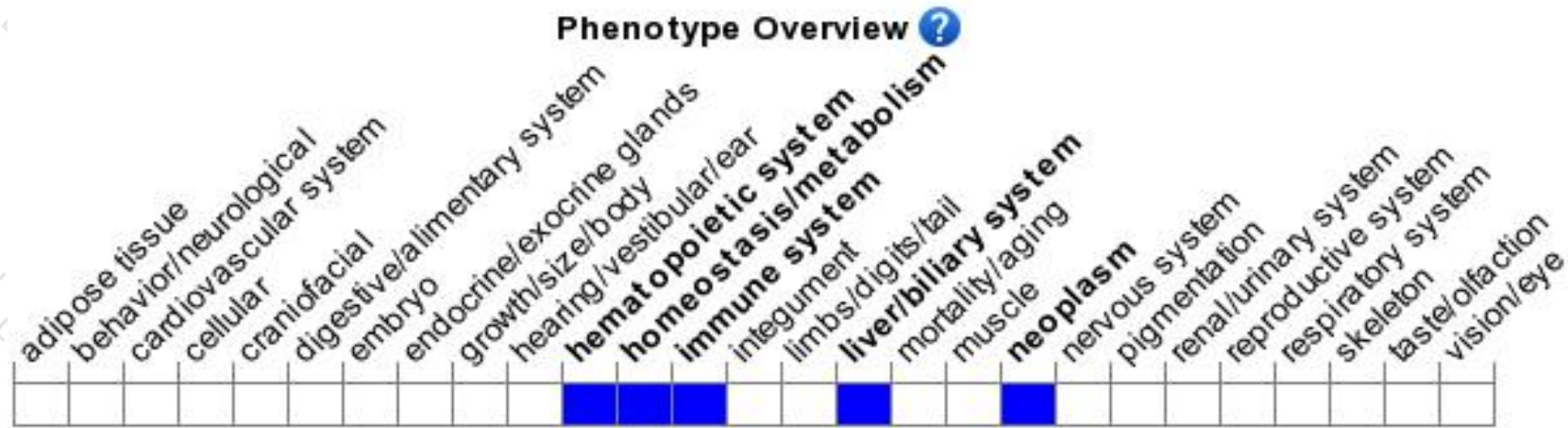
Protein domain



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/>).

According to the existing MGI data, Mice homozygous or hemizygous for an ENU mutation exhibit decreased B cells associated with arrested adult B cell lymphopoiesis.

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

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