

***Tarm1* Cas9-CKO Strategy**

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Project Overview

Project Name

Tarm1

Project type

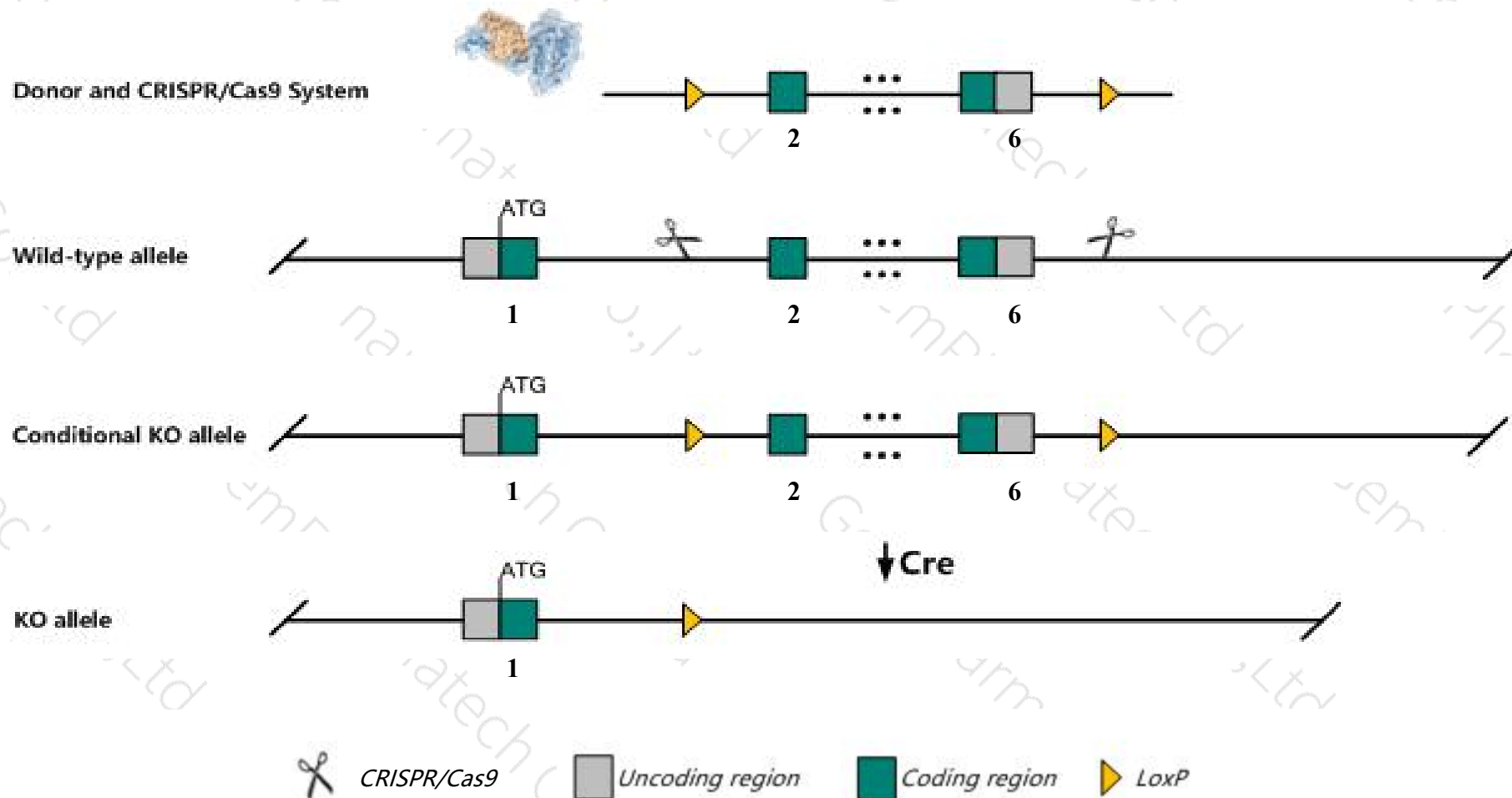
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Tarm1* gene. The schematic diagram is as follows:



Technical routes

- The *Tarm1* gene has 3 transcripts. According to the structure of *Tarm1* gene, exon2-exon6 of *Tarm1*-203(ENSMUST00000203821.2) transcript is recommended as the knockout region. The region contains 833bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Tarm1* gene. The brief process is as follows: CRISPR/Cas9 system 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.
- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

- The KO region contains functional region of the *Gm44165* gene. Knockout the region may affect the function of *Gm44165* gene.
- The *Tarm1* gene is located on the Chr7. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Tarm1 T cell-interacting, activating receptor on myeloid cells 1 [Mus musculus (house mouse)]

Gene ID: 245126, updated on 13-Mar-2020

Summary



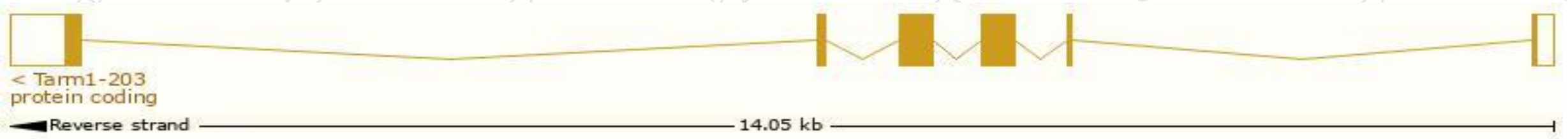
Official Symbol	Tarm1 provided by MGI
Official Full Name	T cell-interacting, activating receptor on myeloid cells 1 provided by MGI
Primary source	MGI:MGI:2442280
See related	Ensembl:ENSMUSG00000053338
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9930022N03Rik, Gm9904, OLT-2
Expression	Biased expression in kidney adult (RPKM 1.0), liver E18 (RPKM 0.4) and 13 other tissues See more

Transcript information (Ensembl)

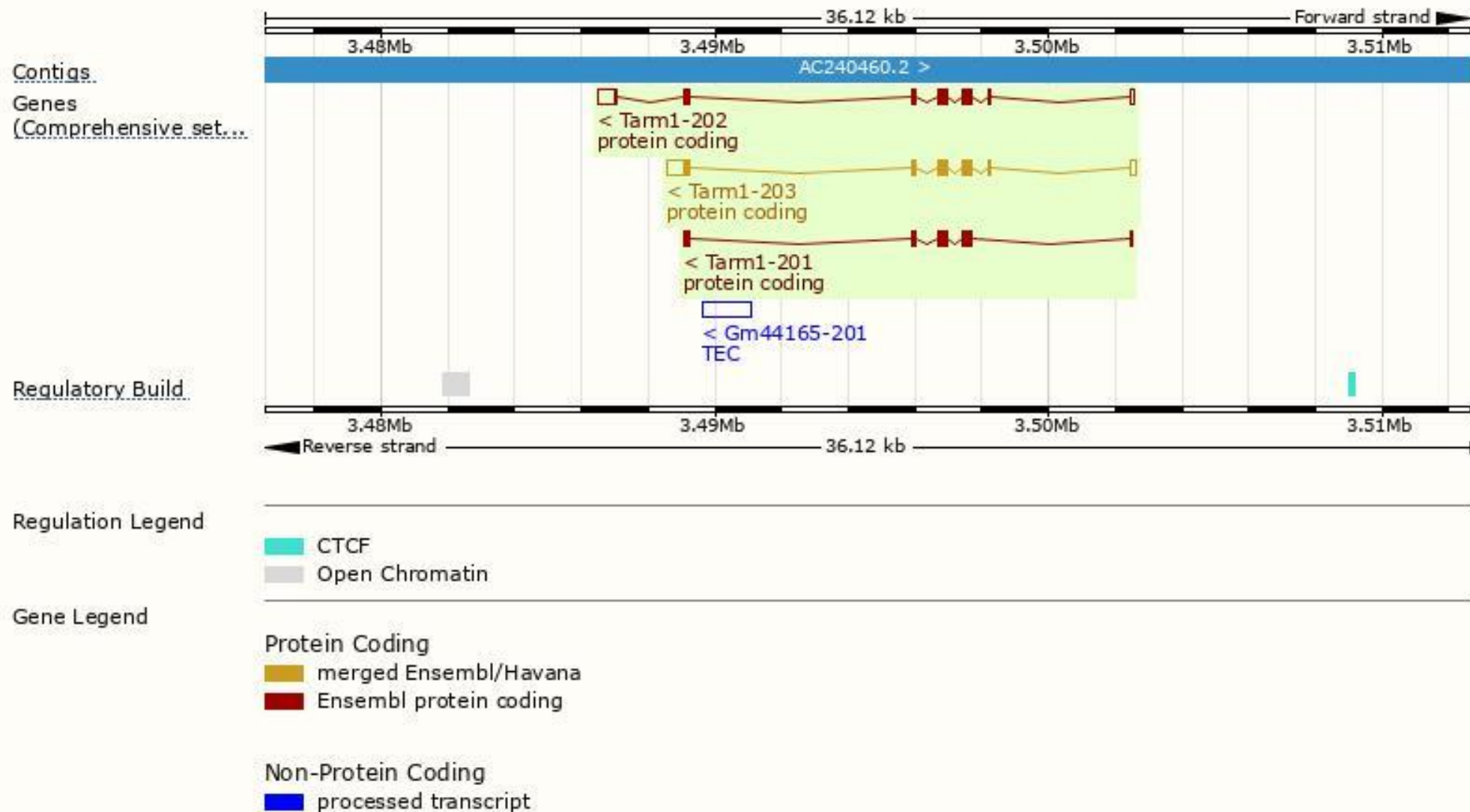
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Tarm1-203	ENSMUST00000203821.2	1535	288aa	Protein coding	CCDS39727	B6A8R8	TSL:1 GENCODE basic APPRIS P2
Tarm1-202	ENSMUST00000203020.2	1487	293aa	Protein coding	-	A0A0N4SVP3	TSL:1 GENCODE basic APPRIS ALT2
Tarm1-201	ENSMUST00000065703.8	892	276aa	Protein coding	-	A0A0R3P9C5	TSL:1 GENCODE basic APPRIS ALT2

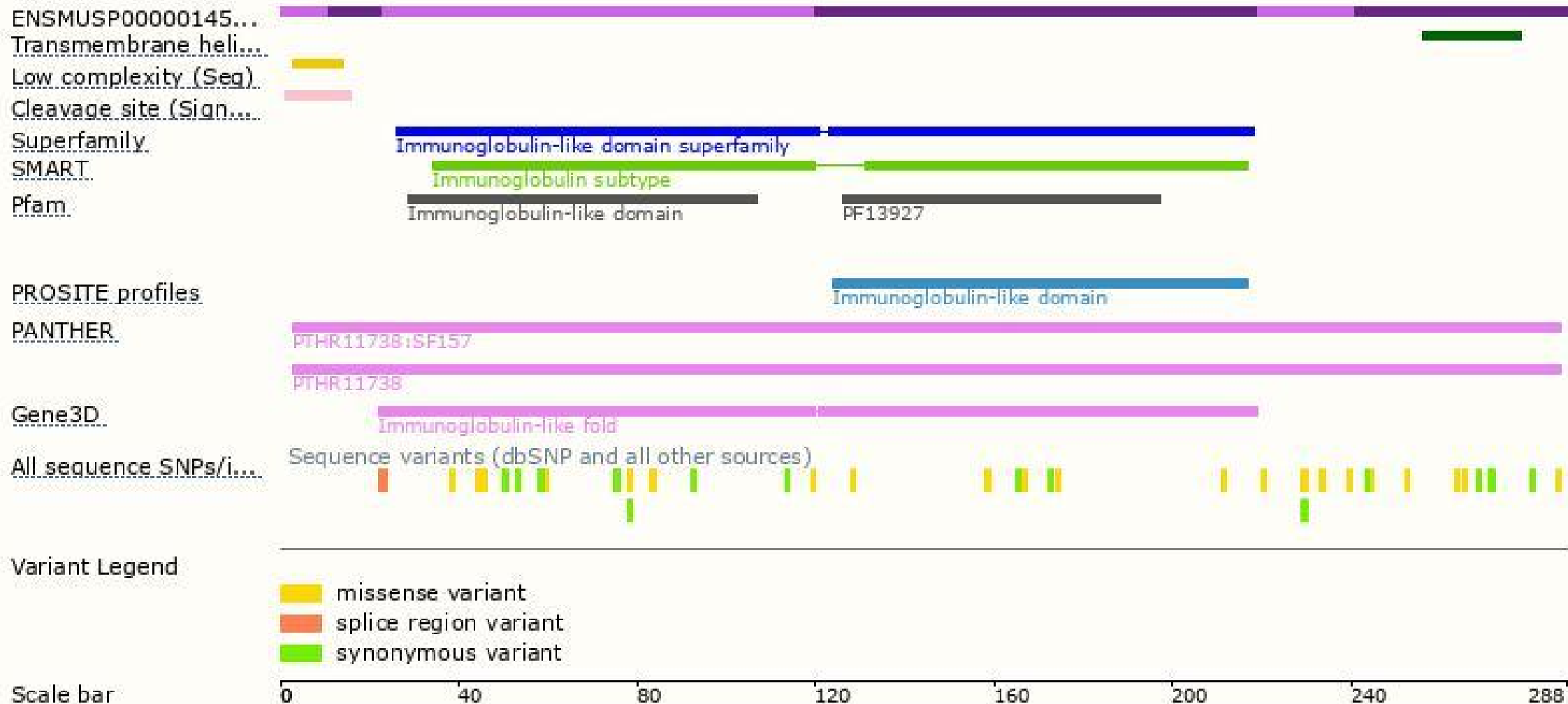
The strategy is based on the design of *Tarm1-203* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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