Icosl Cas9-KO Strategy

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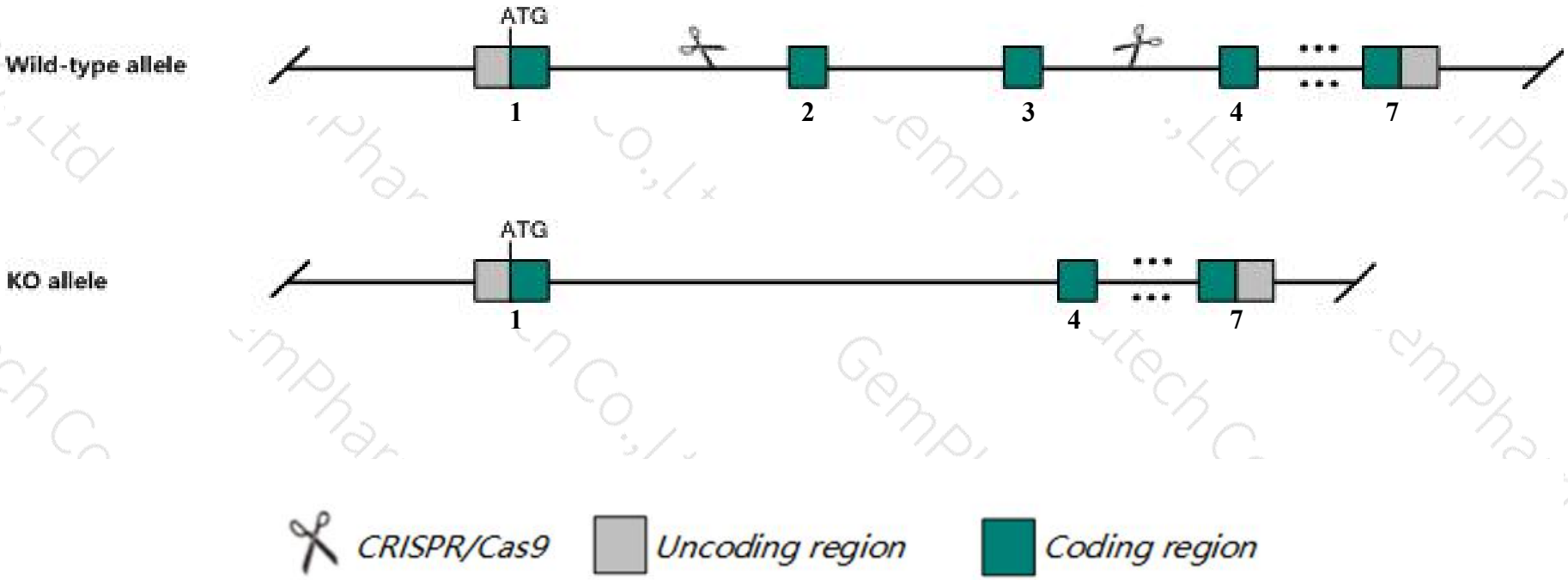
Design Date: 2019-7-19

Project Overview

Project Name	***Icosl***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

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



Technical routes

➢ The *Icosl* gene has 4 transcripts. According to the structure of *Icosl* gene, exon2-exon3 of *Icosl-201* (ENSMUST00000105393.2) transcript is recommended as the knockout region.The region contains 473bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Icosl* gene. The brief process is as follows: CRISPR/Cas9 system v

Notice

- According to the existing MGI data,Mice homozygous for disruptions in this gene exhibit defects in the humoral immune response associated with an impaired interactions between T and B cells.

- The *Icosl* gene is located on the Chr10. 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）

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Icosl icos ligand [Mus musculus (house mouse)]

Gene ID: 50723, updated on 31-Jan-2019

Summary

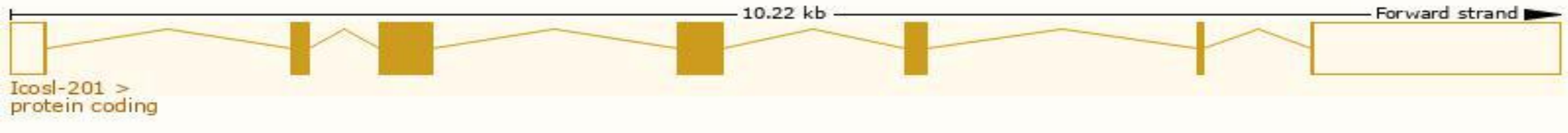
Official Symbol	Icosl provided by MGI
Official Full Name	icos ligand provided by MGI
Primary source	MGI:MGI:1354701
See related	Ensembl:ENSMUSG00000000732
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AU044799, B7-H2, B7RP-1, B7h, BG071784, GI50, GL50, GL50-B, ICOS-L, Icoslg, LICOS, Ly115l, mKIAA0653
Expression	Broad expression in spleen adult (RPKM 32.9), mammary gland adult (RPKM 16.0) and 17 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

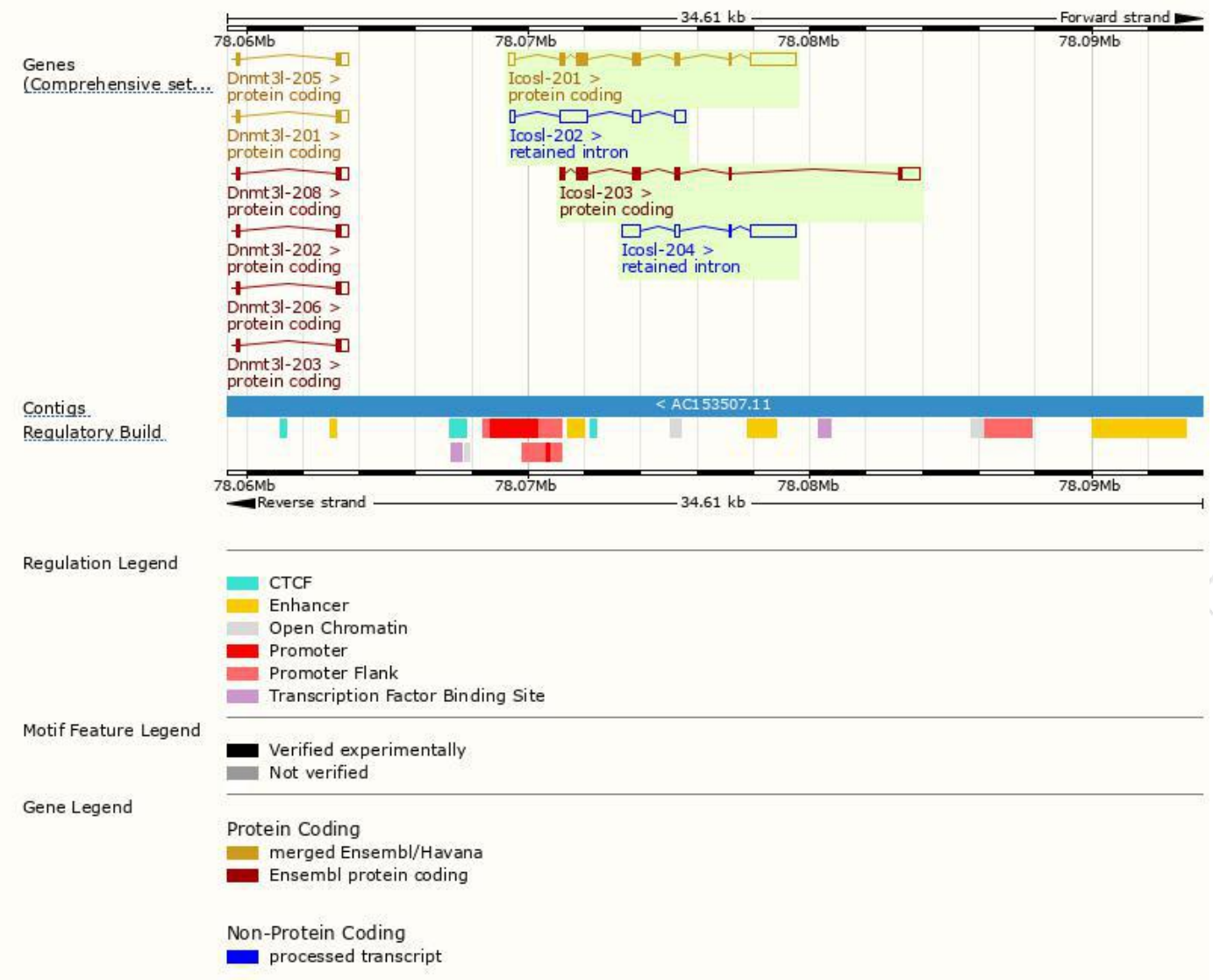
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Icosl-201	ENSMUST00000105393.2	2814	322aa	Protein coding	CCDS35956	Q544C7 Q9JHJ8	TSL:1 GENCODE basic APPRIS P1
Icosl-203	ENSMUST00000219038.1	1691	344aa	Protein coding	-	A0A1W2P6Q2	CDS 5' incomplete TSL:5
Icosl-204	ENSMUST00000219633.1	2475	No protein	Retained intron	-	-	TSL:1
Icosl-202	ENSMUST00000217675.1	1787	No protein	Retained intron	-	-	TSL:2

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

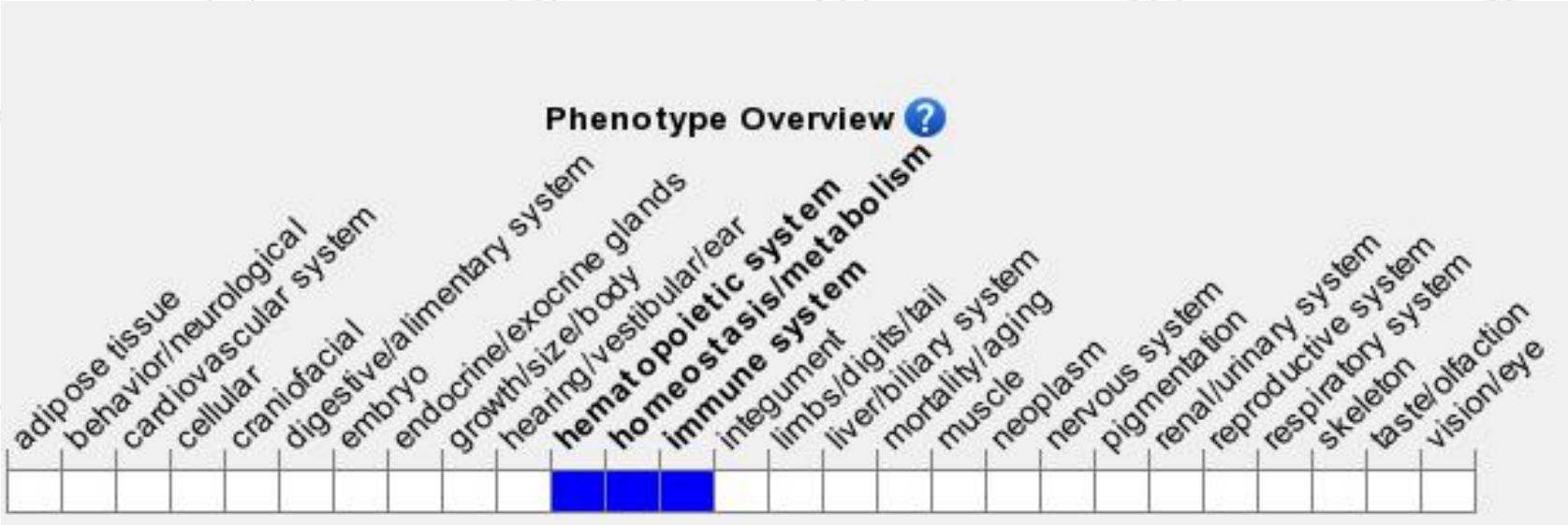


Genomic location distribution



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/).

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

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