

Ints4 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Ints4

Project type

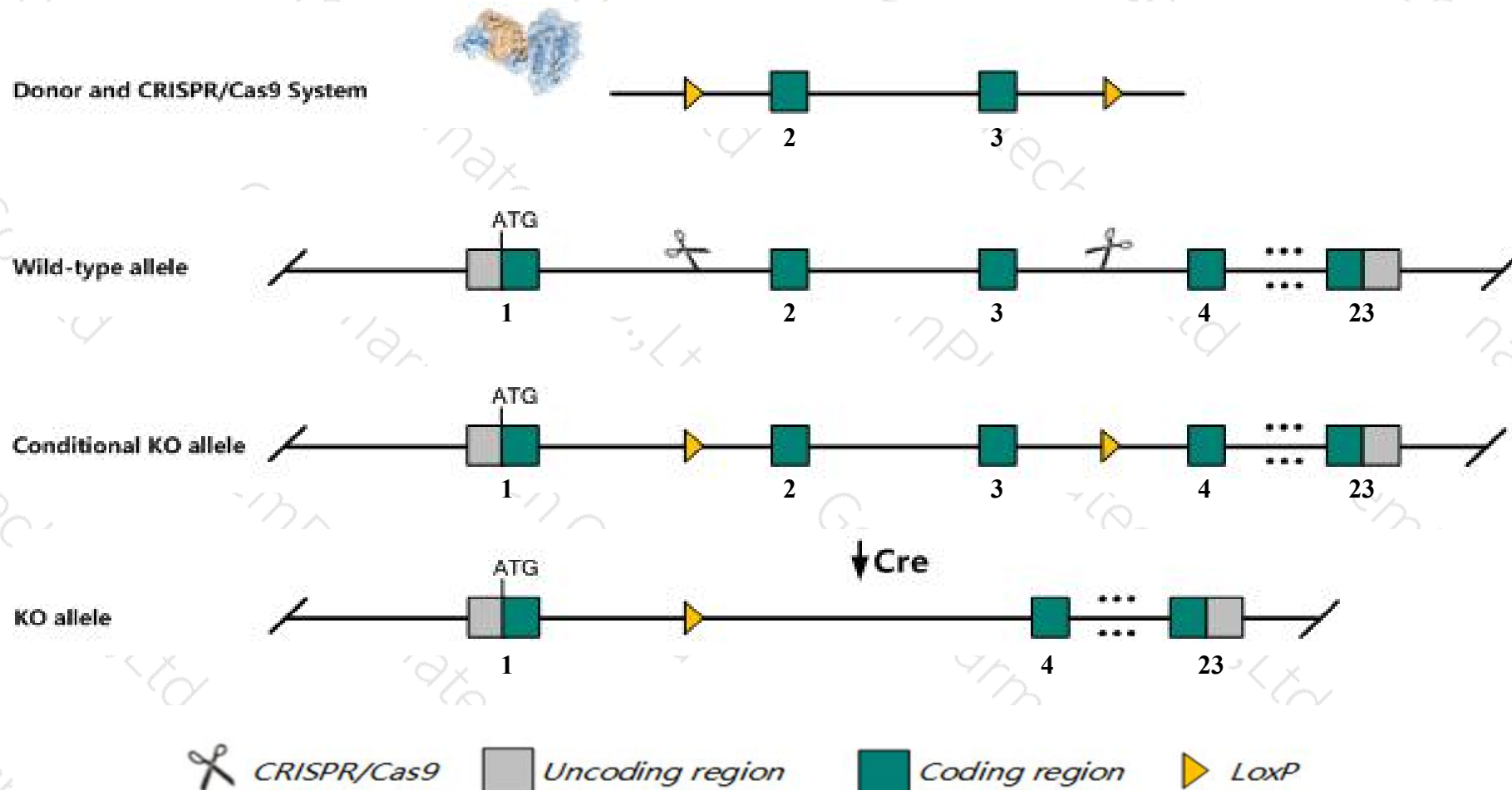
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ints4* gene. The schematic diagram is as follows:



- The *Ints4* gene has 7 transcripts. According to the structure of *Ints4* gene, exon2-exon3 of *Ints4-201* (ENSMUST00000026126.9) transcript is recommended as the knockout region. The region contains 313bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ints4* 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

- Transcripts 202,204,205,207 may not be affected.
- The *Ints4* 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)

Ints4 integrator complex subunit 4 [*Mus musculus* (house mouse)]

Gene ID: 101861, updated on 10-Oct-2019

Summary

Official Symbol	Ints4 provided by MGI
Official Full Name	integrator complex subunit 4 provided by MGI
Primary source	MGI:MGI:1917164
See related	Ensembl:ENSMUSG00000025133
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	AA692684; AW493223; 2610034N24Rik
Expression	Ubiquitous expression in subcutaneous fat pad adult (RPKM 15.6), ovary adult (RPKM 14.8) and 28 other tissues See more
Orthologs	human all

Genomic context

Location: 7; 7 E1

Exon count: 23

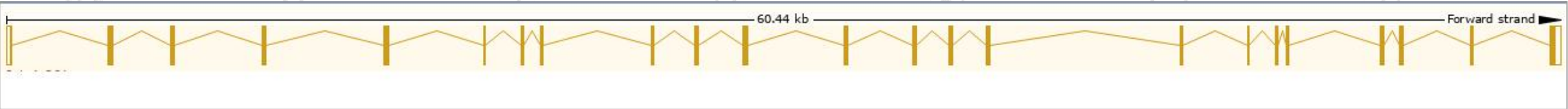
See Ints4 in [Genome Data Viewer](#)

Transcript information (Ensembl)

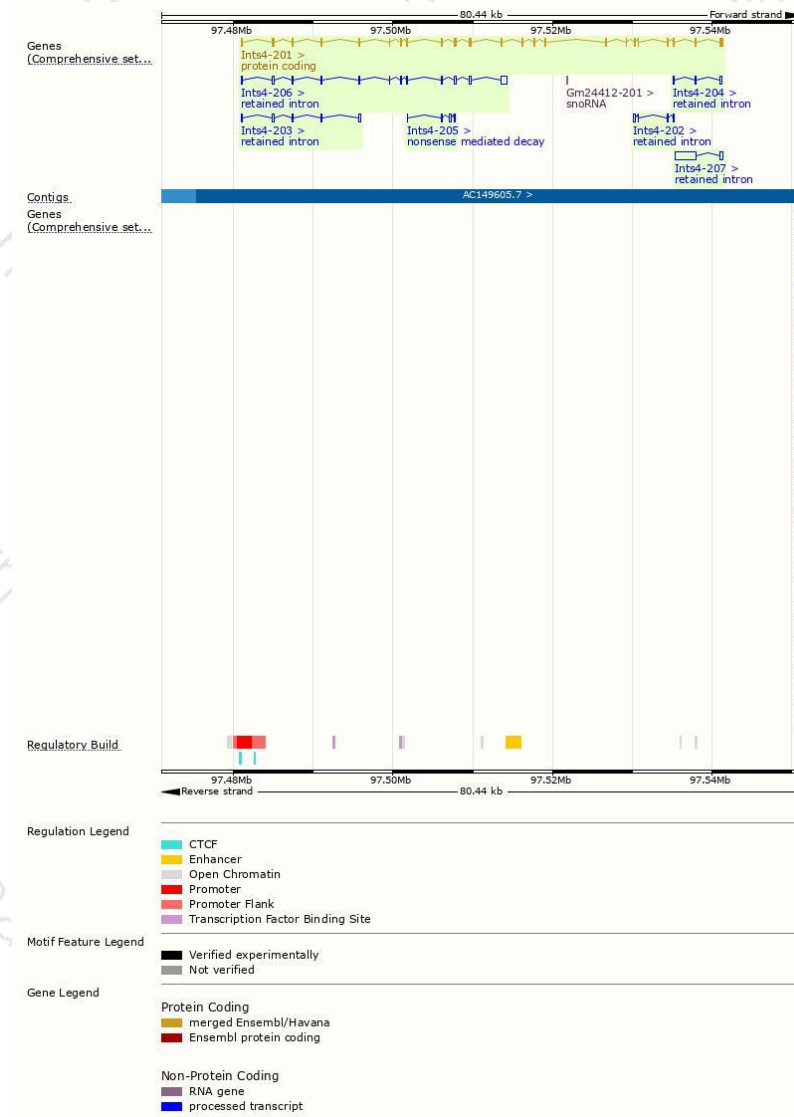
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ints4-201	ENSMUST00000026126.9	3240	964aa	Protein coding	CCDS21460	Q8CIM8	TSL:1 GENCODE basic APPRIS P1
Ints4-205	ENSMUST00000205876.1	585	63aa	Nonsense mediated decay	-	A0A0U1RPX1	CDS 5' incomplete TSL:2
Ints4-207	ENSMUST00000206843.1	3095	No protein	Retained intron	-	-	TSL:1
Ints4-206	ENSMUST00000206644.1	2179	No protein	Retained intron	-	-	TSL:1
Ints4-203	ENSMUST00000205481.1	885	No protein	Retained intron	-	-	TSL:1
Ints4-202	ENSMUST00000205387.1	600	No protein	Retained intron	-	-	TSL:2
Ints4-204	ENSMUST00000205706.1	579	No protein	Retained intron	-	-	TSL:2

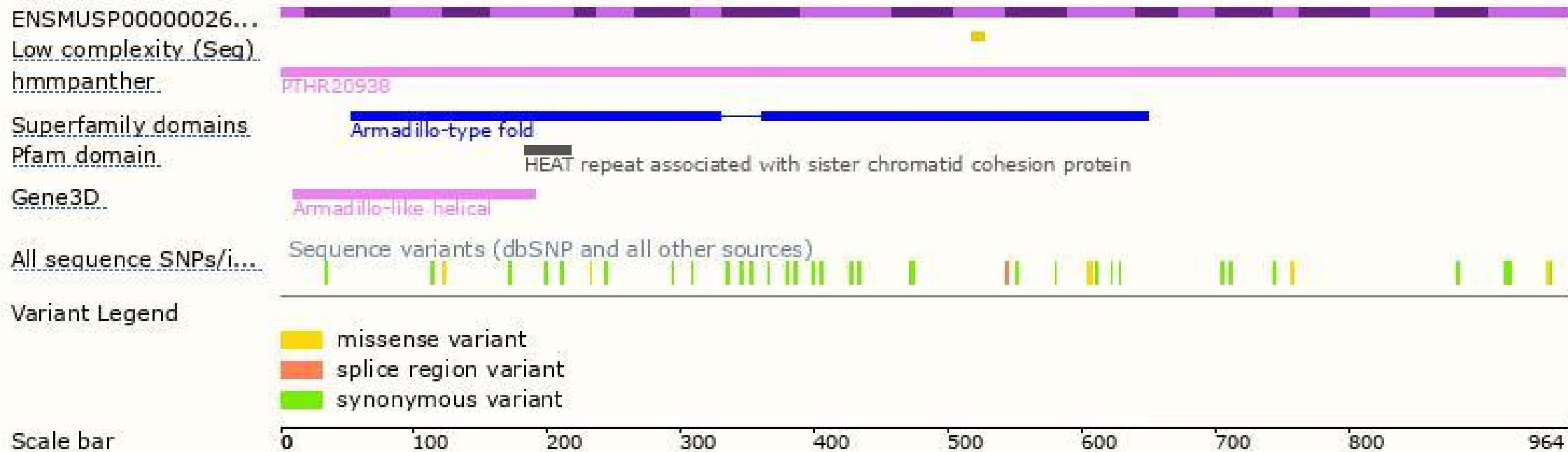
The strategy is based on the design of *Ints4-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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