

Hacd3 Cas9-CKO Strategy

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Project Overview

Project Name

Hacd3

Project type

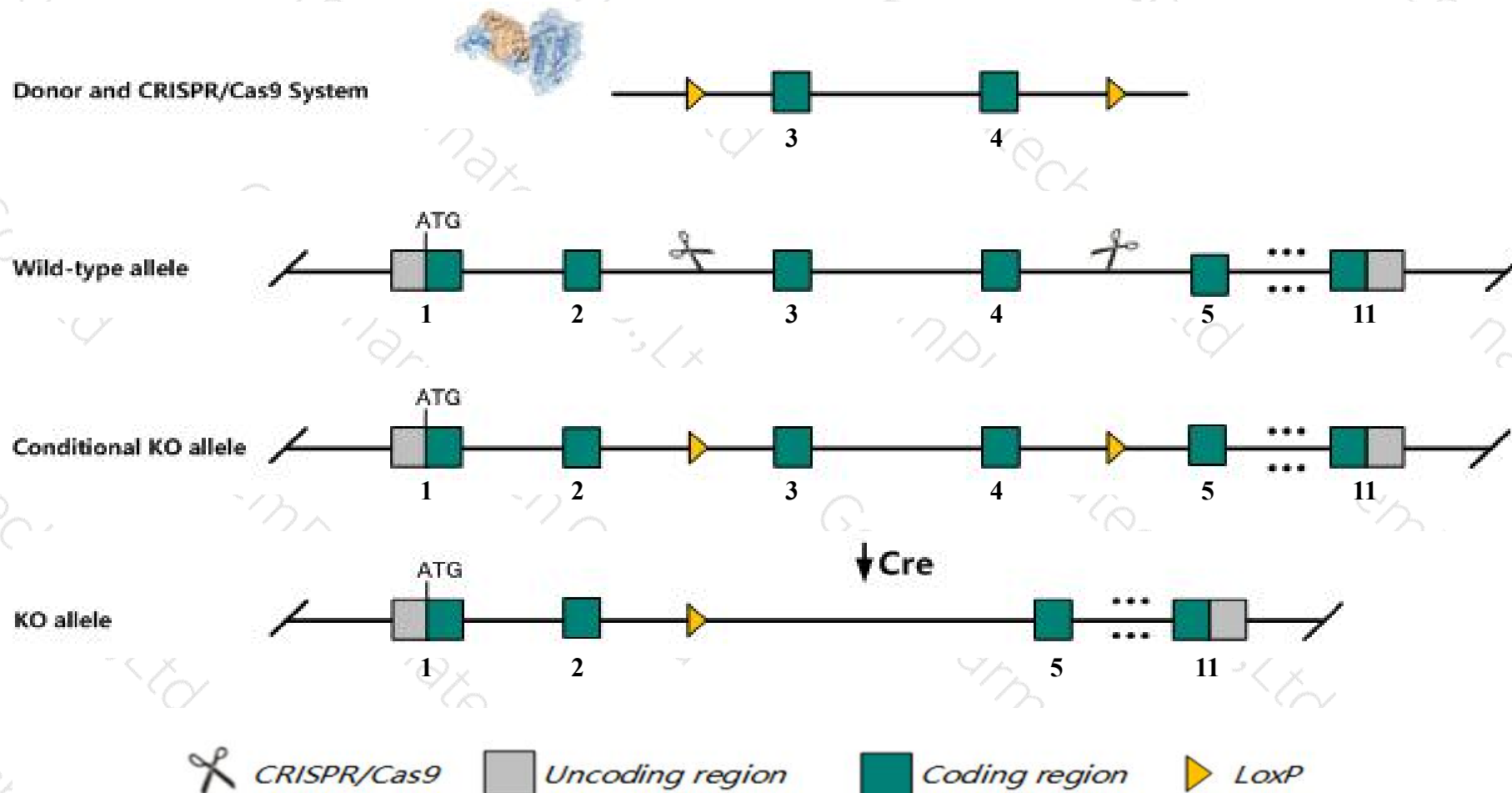
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Hacd3* gene. The schematic diagram is as follows:



- The *Hacd3* gene has 1 transcript. According to the structure of *Hacd3* gene, exon3-exon4 of *Hacd3*-201 (ENSMUST00000036615.6) transcript is recommended as the knockout region. The region contains 239bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Hacd3* 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 *Hacd3* gene is located on the Chr9. 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)

Hacd3 3-hydroxyacyl-CoA dehydratase 3 [*Mus musculus* (house mouse)]

Gene ID: 57874, updated on 16-Jul-2019

Summary

Official Symbol Hacd3 provided by [MGI](#)

Official Full Name 3-hydroxyacyl-CoA dehydratase 3 provided by [MGI](#)

Primary source [MGI:MGI:1889341](#)

See related [Ensembl:ENSMUSG000000033629](#)

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 Hcad3; B-ind1; Hspc121; Ptplad1; AW742319; 4930523M17Rik

Expression Ubiquitous expression in adrenal adult (RPKM 48.9), ovary adult (RPKM 29.3) and 28 other tissues [See more](#)

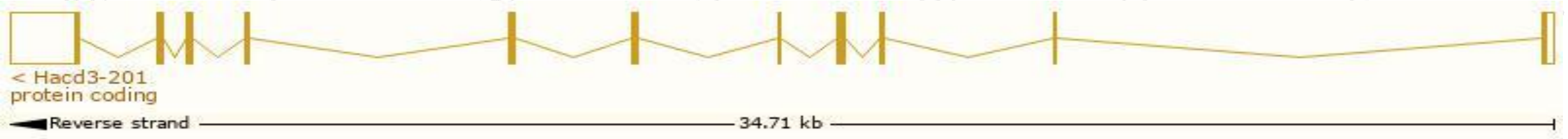
Orthologs [human](#) [all](#)

Transcript information (Ensembl)

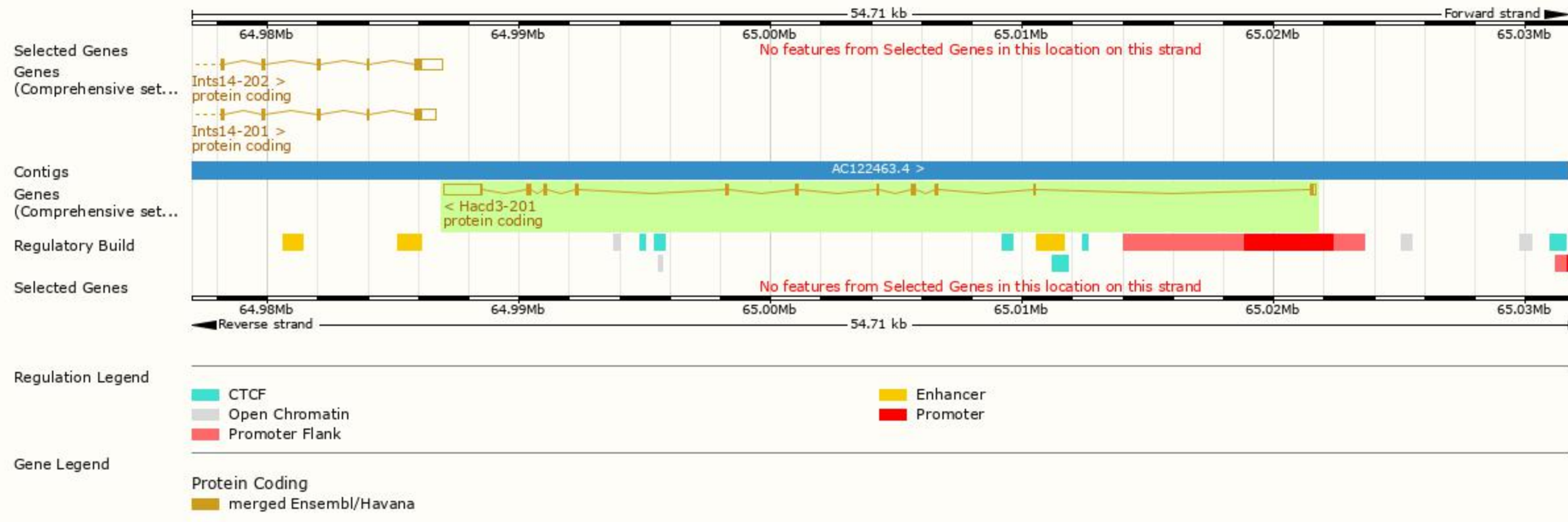
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Hacd3-201	ENSMUST00000036615.6	2709	362aa	Protein coding	CCDS23284	Q8K2C9	TSL:1 GENCODE basic APPRIS P1

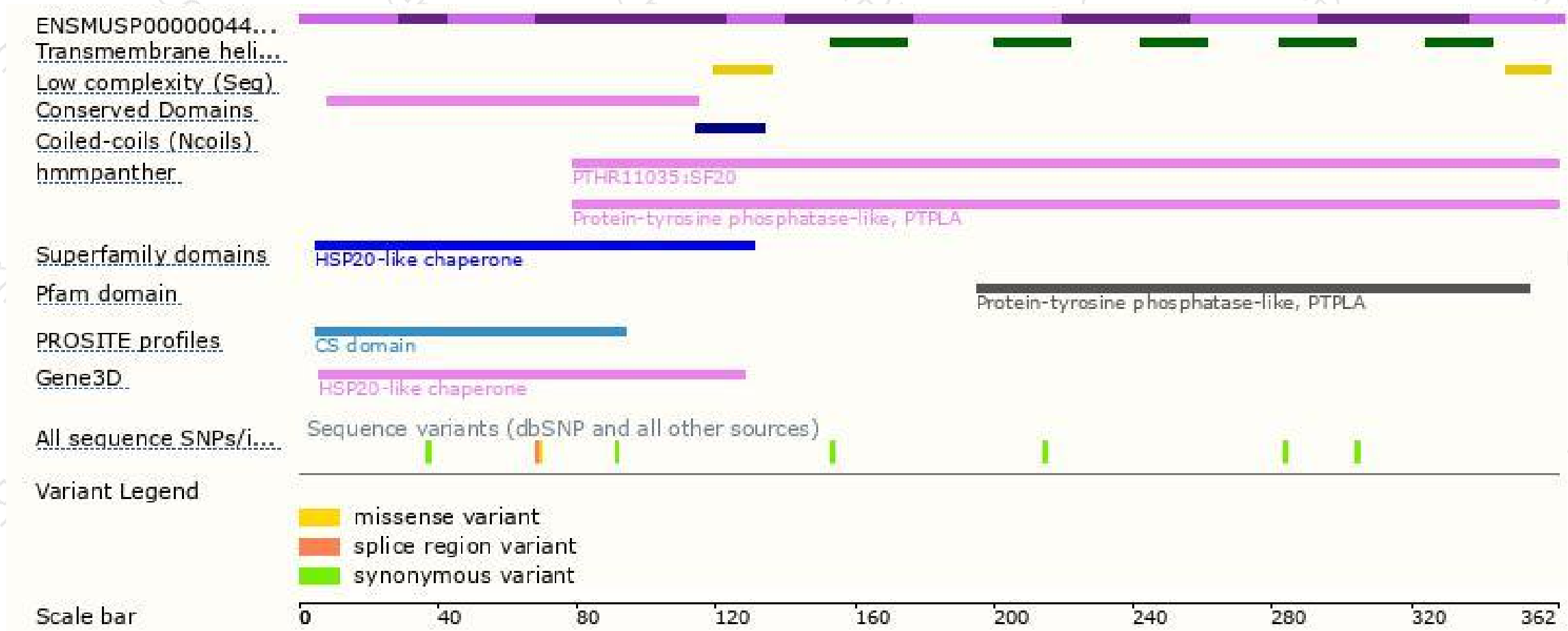
The strategy is based on the design of *Hacd3-201* transcript, The transcription is shown below



Genomic location distribution



Protein domain



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

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