

Ywhag Cas9-CKO Strategy

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Reviewer:

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Design Date:

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Project Overview

Project Name

Ywhag

Project type

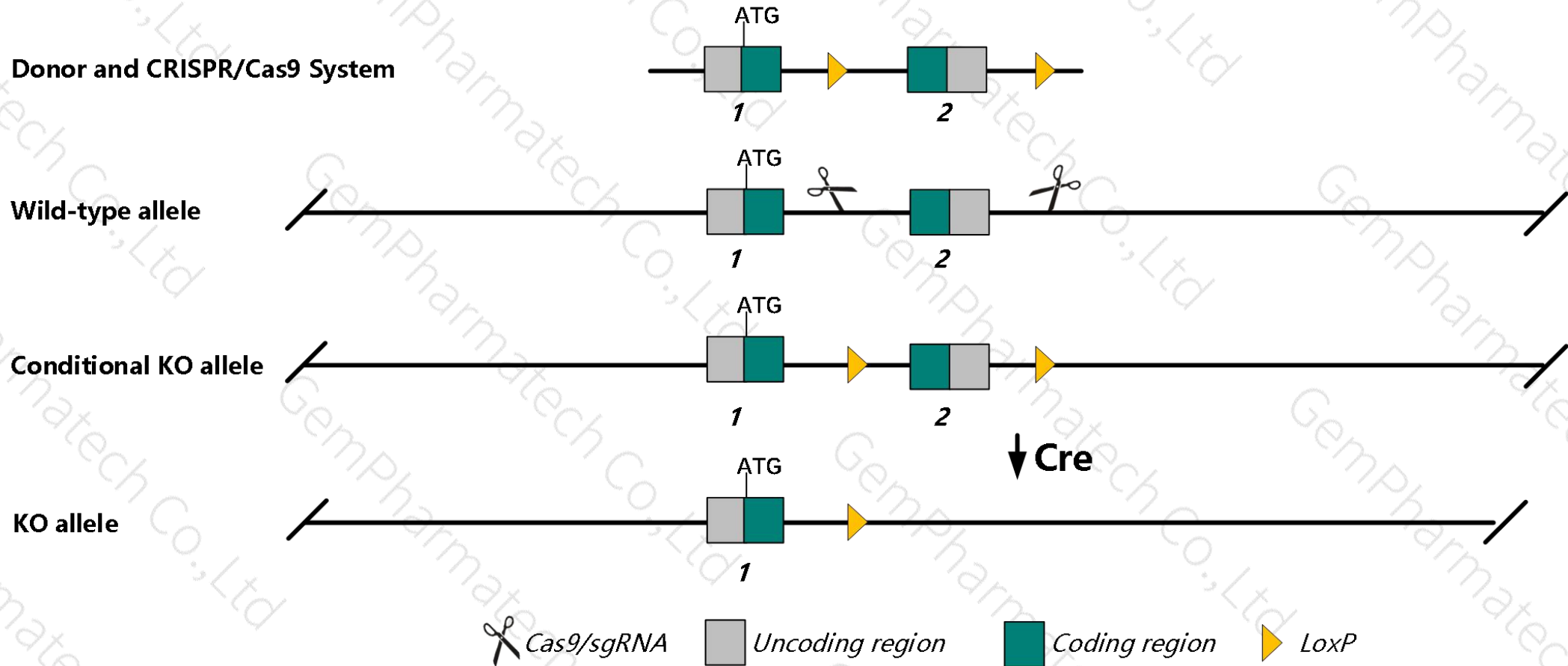
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

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



Technical routes

- The *Ywhag* gene has 5 transcripts. According to the structure of *Ywhag* gene, exon2 of *Ywhag-201* (ENSMUST00000055808.5) transcript is recommended as the knockout region. The region contains most of coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ywhag* 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

- According to the existing MGI data, Homozygous null mutants appear normal and exhibit unchanged survival rates after inoculation with pathological prion protein.
- Transcript *Ywhag*-202/203 may not be affected.
- The *Ywhag* gene is located on the Chr5. 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)

Ywhag tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, gamma polypeptide [*Mus musculus* (house mouse)]

Gene ID: 22628, updated on 3-Nov-2019

Summary

Official Symbol Ywhag provided by MGI

Official Full Name tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, gamma polypeptide provided by MGI

Primary source [MGI:MGI:108109](#)

See related [Ensembl:ENSMUSG00000051391](#)

Gene type protein coding

RefSeq status VALIDATED

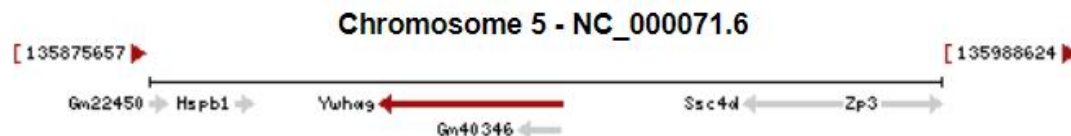
Organism [Mus musculus](#)

Lineage Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus

Also known as D7Bwg1348e; 14-3-3gamma

Expression Ubiquitous expression in CNS E18 (RPKM 141.0), frontal lobe adult (RPKM 128.8) and 27 other tissues [See more](#)

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

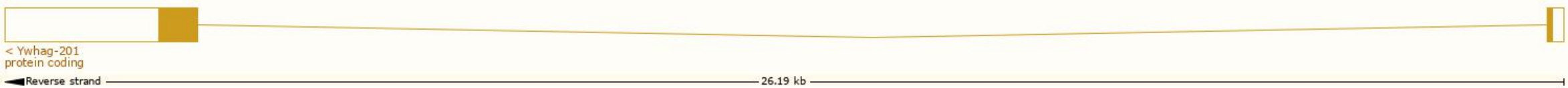


Transcript information (Ensembl)

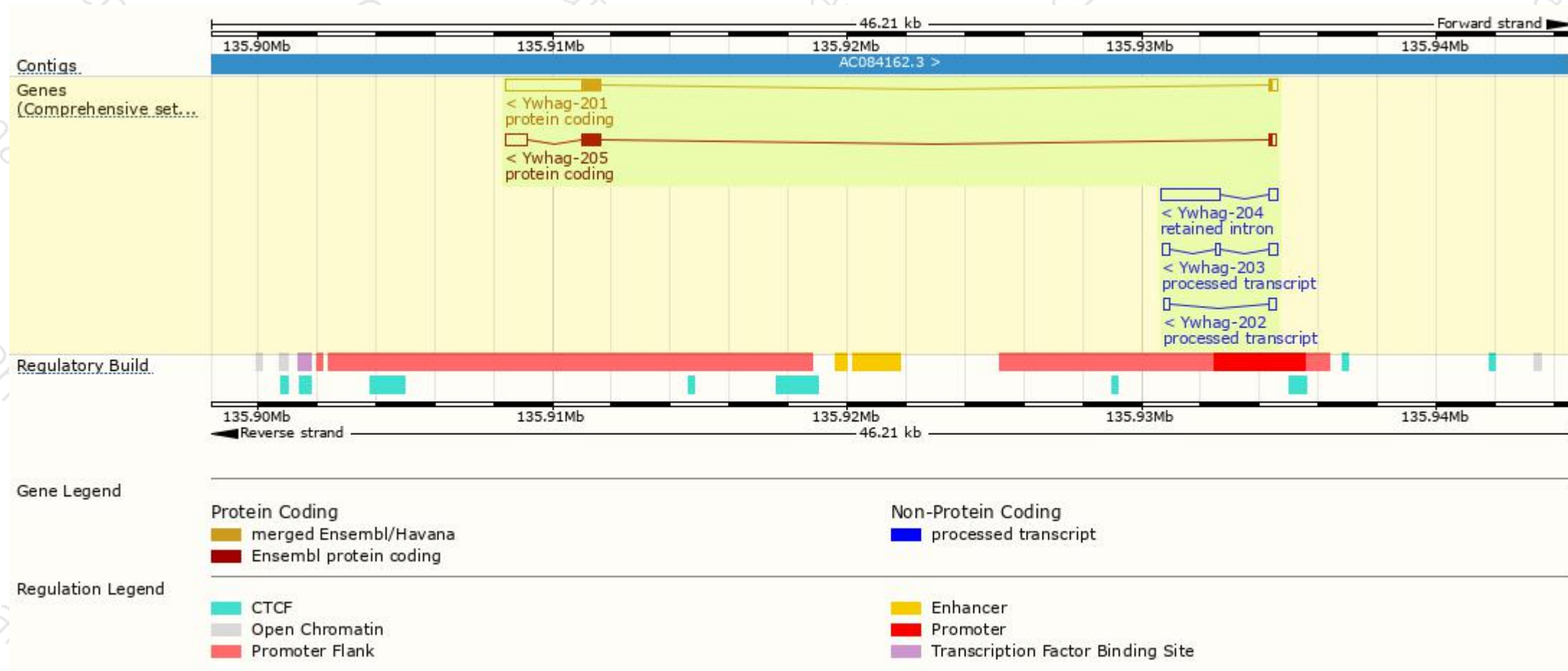
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ywhag-201	ENSMUST00000055808.5	3520	247aa	Protein coding	CCDS19748	A8IP69 P61982	TSL:1 GENCODE basic APPRIS P1
Ywhag-205	ENSMUST00000198270.1	1610	247aa	Protein coding	CCDS19748	A8IP69 P61982	TSL:5 GENCODE basic APPRIS P1
Ywhag-203	ENSMUST00000126639.1	685	No protein	Processed transcript	-	-	TSL:3
Ywhag-202	ENSMUST00000126192.1	417	No protein	Processed transcript	-	-	TSL:3
Ywhag-204	ENSMUST00000129581.1	2238	No protein	Retained intron	-	-	TSL:1

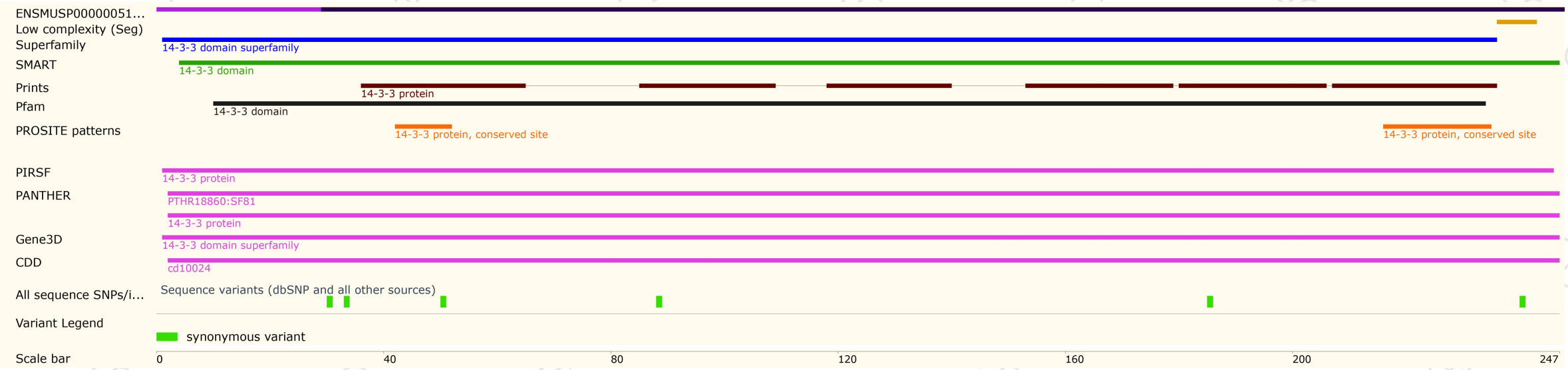
The strategy is based on the design of *Ywhag-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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