

# *Ywhag* Cas9-KO Strategy

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**Reviewer:**

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**Design Date:**

**2020-2-10**

# Project Overview

**Project Name**

***Ywhag***

**Project type**

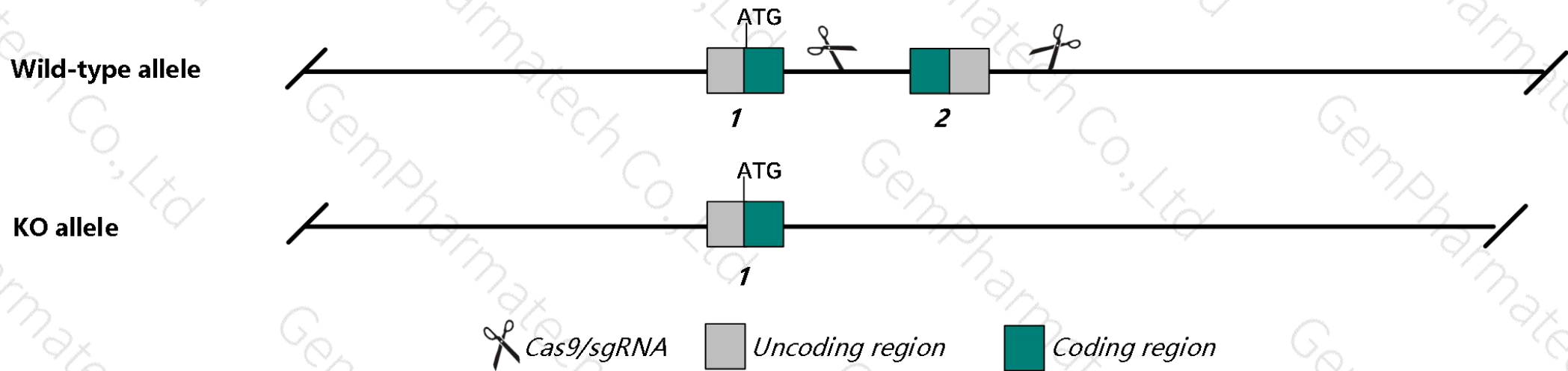
**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# 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 tr

- 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 the gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology 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

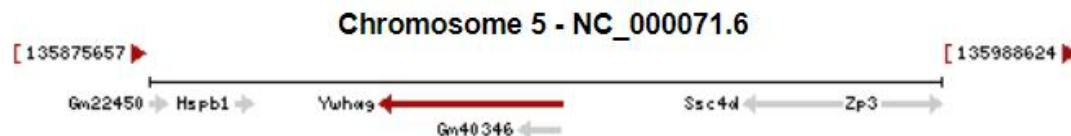
**Organism** [Mus musculus](#)

**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](#)

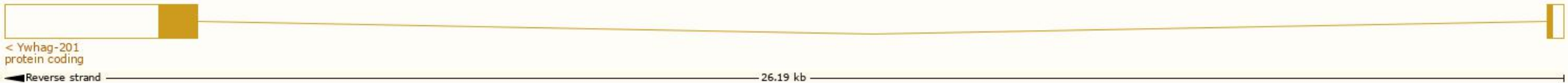


# Transcript information (Ensembl)

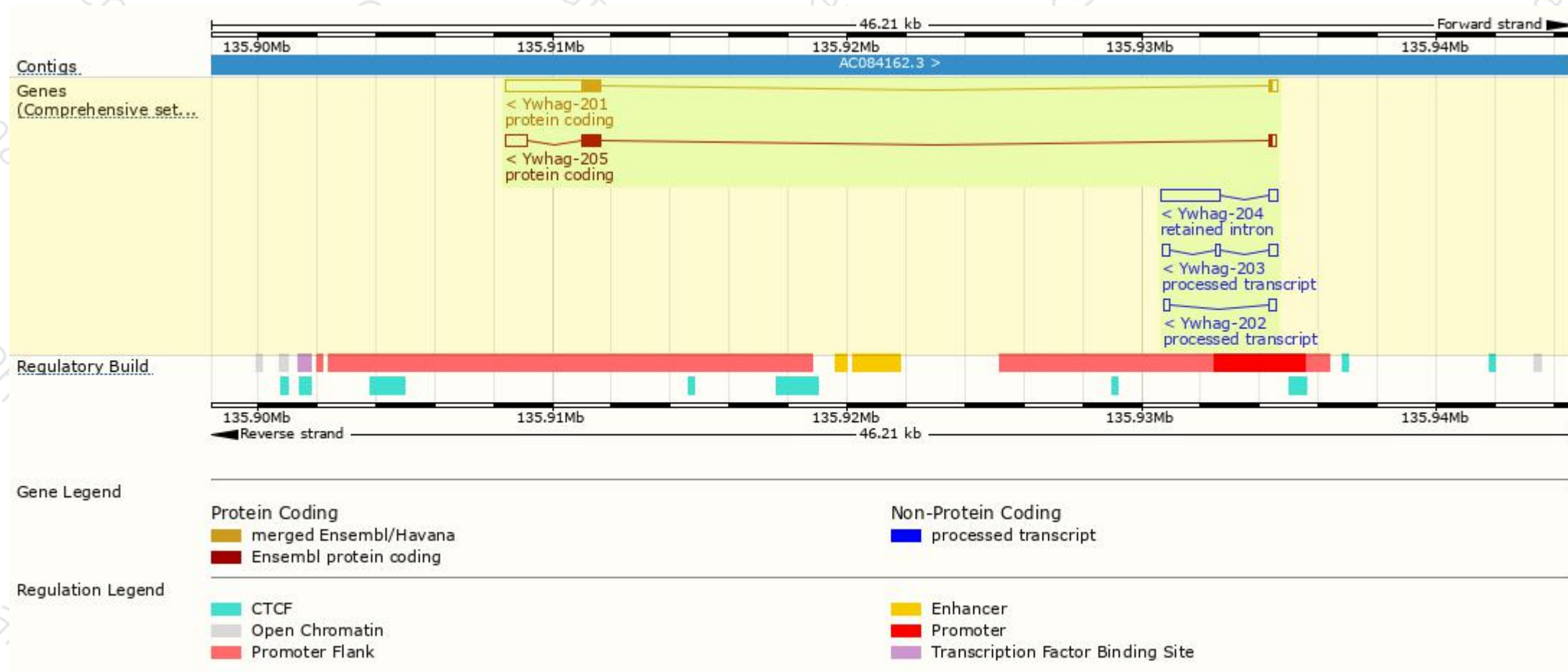
The gene has 5 transcripts,all transcripts are shown below:

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

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

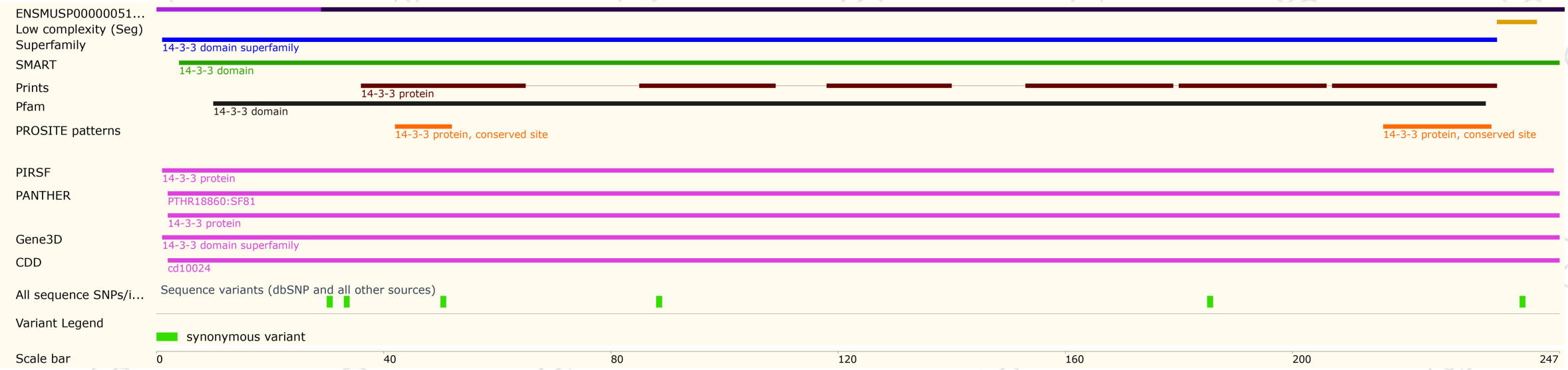


# Genomic location distribution





# Protein domain



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

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