

Ywhab Cas9-CKO Strategy

Designer:

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Design Date:

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Project Overview

Project Name

Ywhab

Project type

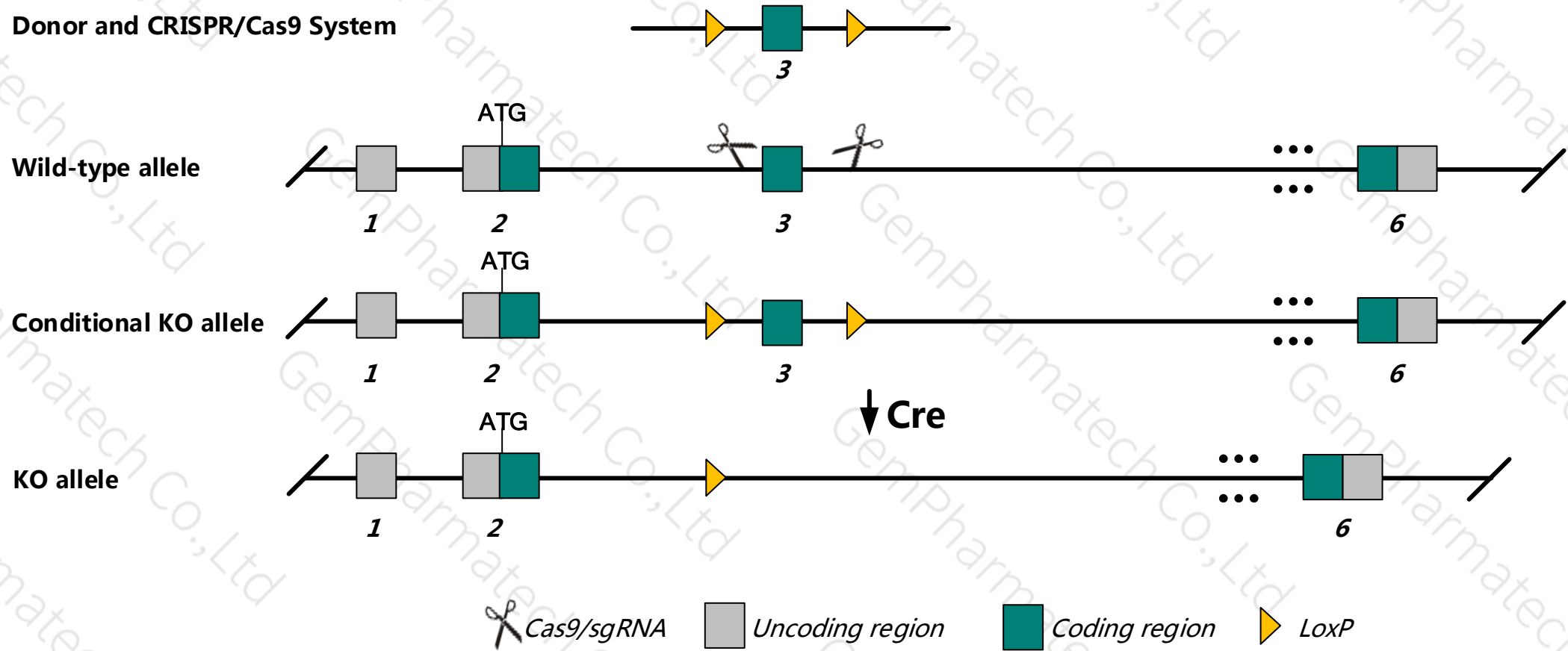
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

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



- The *Ywhab* gene has 2 transcripts. According to the structure of *Ywhab* gene, exon3 of *Ywhab*-201 (ENSMUST00000018470.9) transcript is recommended as the knockout region. The region contains 124bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ywhab* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA 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 was knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues or cell types.

- The *Ywhab* gene is located on the Chr2. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

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

Gene ID: 54401, updated on 9-Dec-2018

Summary

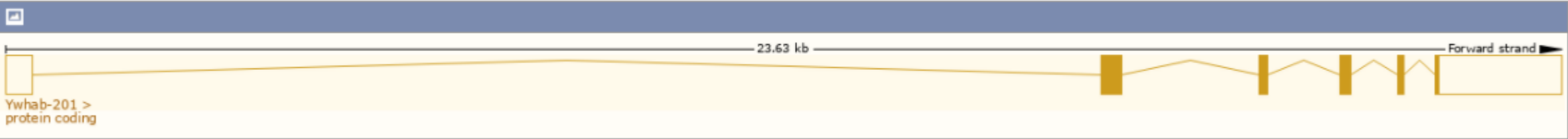
Official Symbol	Ywhab provided by MGI
Official Full Name	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, beta polypeptide provided by MGI
Primary source	MGI:MGI:1891917
See related	Ensembl:ENSMUSG00000018326
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	<i>Mus musculus</i>
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	14-3-3b; 1300003C17Rik
Expression	Ubiquitous expression in cortex adult (RPKM 73.1), CNS E18 (RPKM 72.1) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

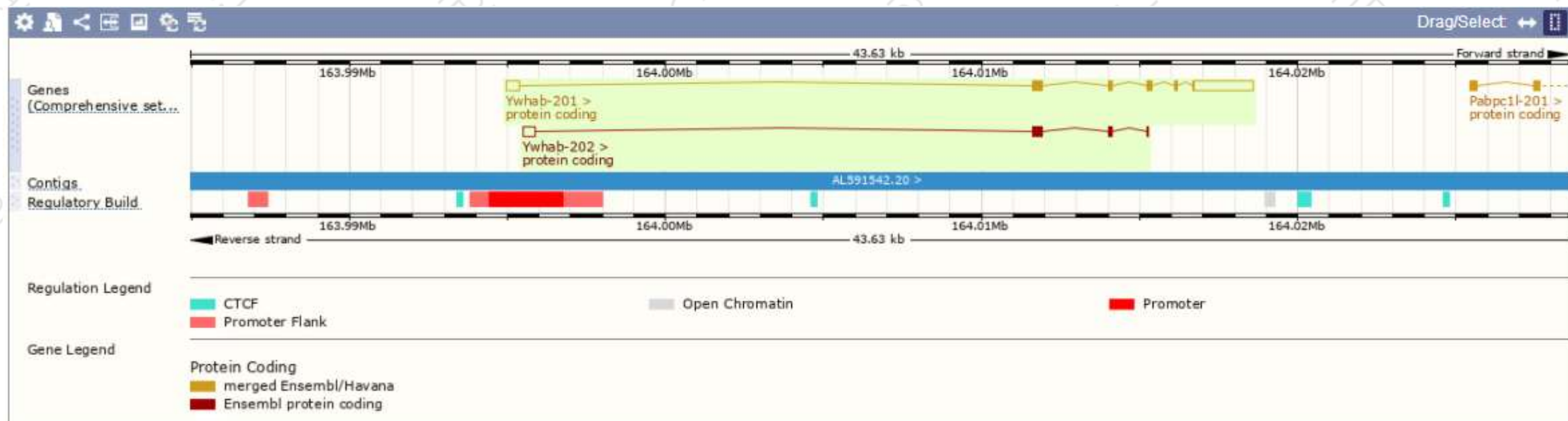
The gene has 2 transcripts, and all transcripts are shown below:

Show/hide columns (1 hidden)								Filter	
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	RefSeq	Flags	
Ywhab-201	ENSMUST00000018470.9	3013	246aa	Protein coding	CCDS17019	A2A5N2 Q9CQV8	NM_018753 NP_061223	TSL:1	GENCODE basic APPRIS P1
Ywhab-202	ENSMUST00000131288.1	849	159aa	Protein coding	-	A2A5N1	-	CDS 3' incomplete	TSL:3

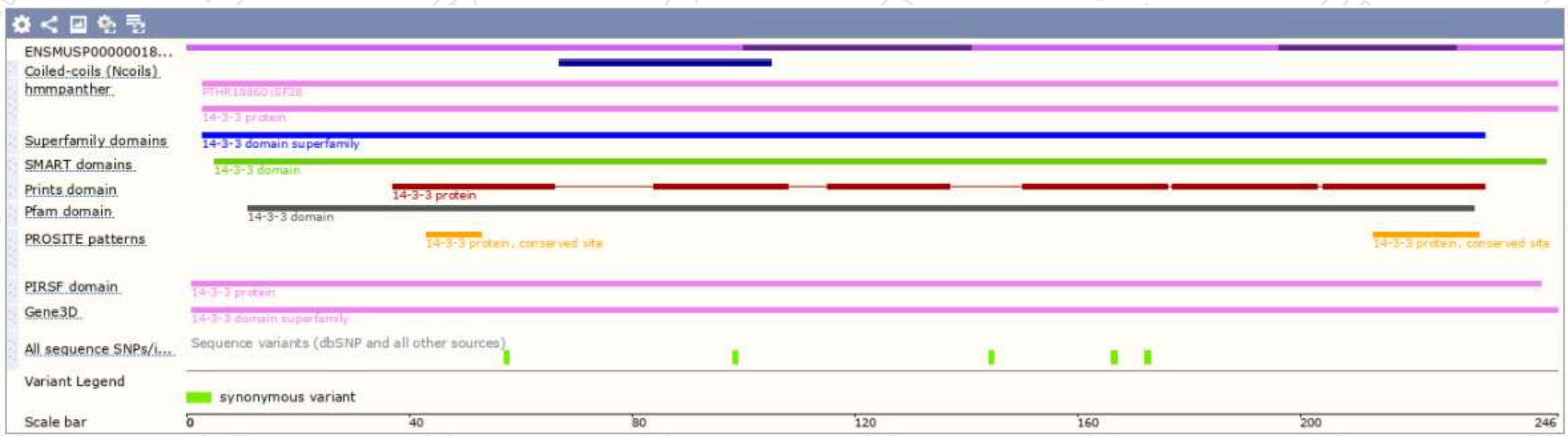
The strategy is based on the design of *Ywhab*-201 transcript, The transcription is shown below



Genomic location distribution



Protein domain



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