Ywhah Cas9-KO Strategy

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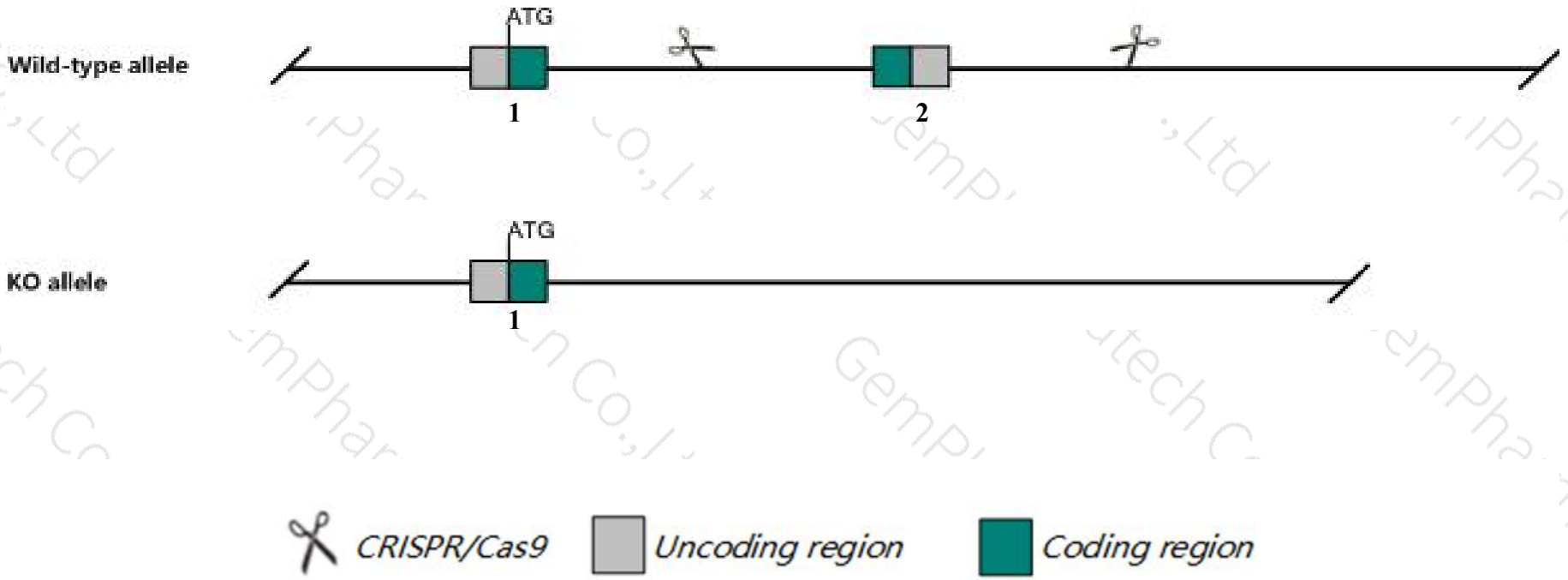
Project Overview

Project Name	***Ywhah***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

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



Technical routes

➢ The *Ywhah* gene has 4 transcripts. According to the structure of *Ywhah* gene, exon2 of *Ywhah-201* (ENSMUST00000019109.7) transcript is recommended as the knockout region.The region contains most of the coding sequence.Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Ywhah* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

➢ The *Ywhah* 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）

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

Gene ID: 22629, updated on 27-Aug-2019

Summary

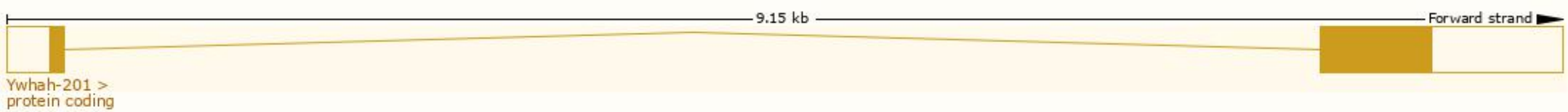
Official Symbol	Ywhah provided by MGI
Official Full Name	tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, eta polypeptide provided by MGI
Primary source	MGI:MGI:109194
See related	Ensembl:ENSMUSG00000018965
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Expression	Broad expression in cerebellum adult (RPKM 399.9), cortex adult (RPKM 372.6) and 26 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

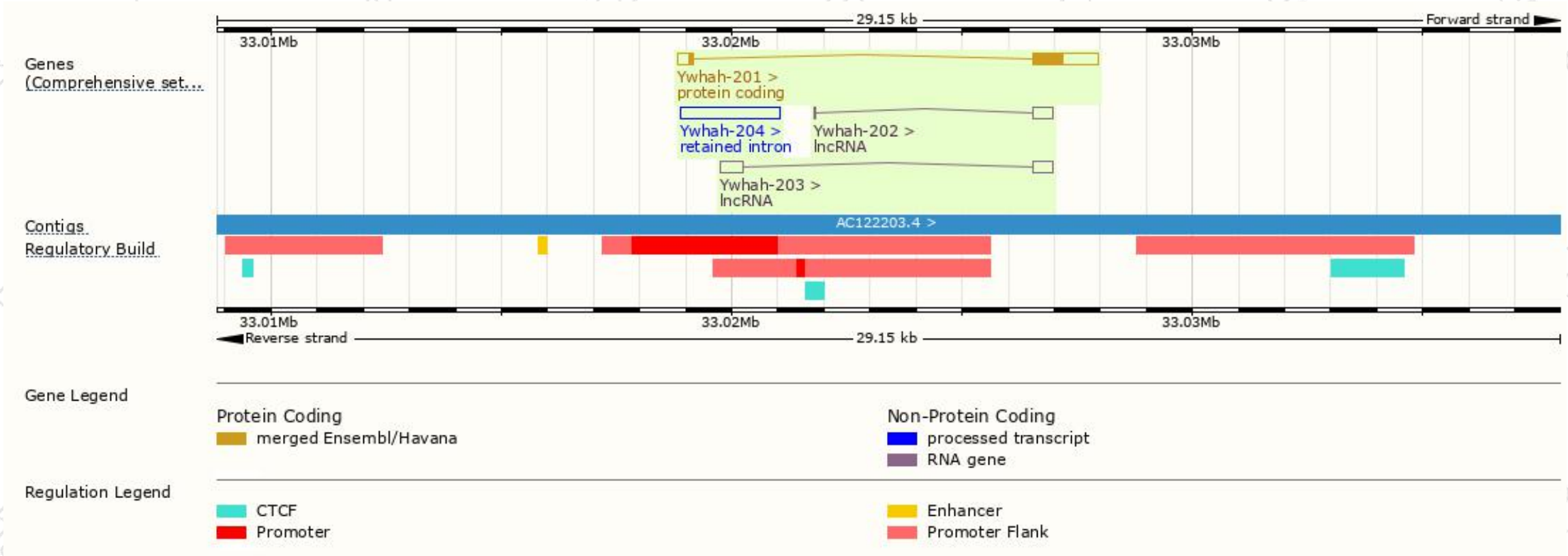
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ywhah-201	ENSMUST00000019109.7	1764	246aa	Protein coding	CCDS19198	P68510	TSL:1 GENCODE basic APPRIS P1
Ywhah-204	ENSMUST00000199651.1	2181	No protein	Retained intron	-	-	TSL:NA
Ywhah-203	ENSMUST00000138261.1	904	No protein	lncRNA	-	-	TSL:5
Ywhah-202	ENSMUST00000136667.1	481	No protein	lncRNA	-	-	TSL:5

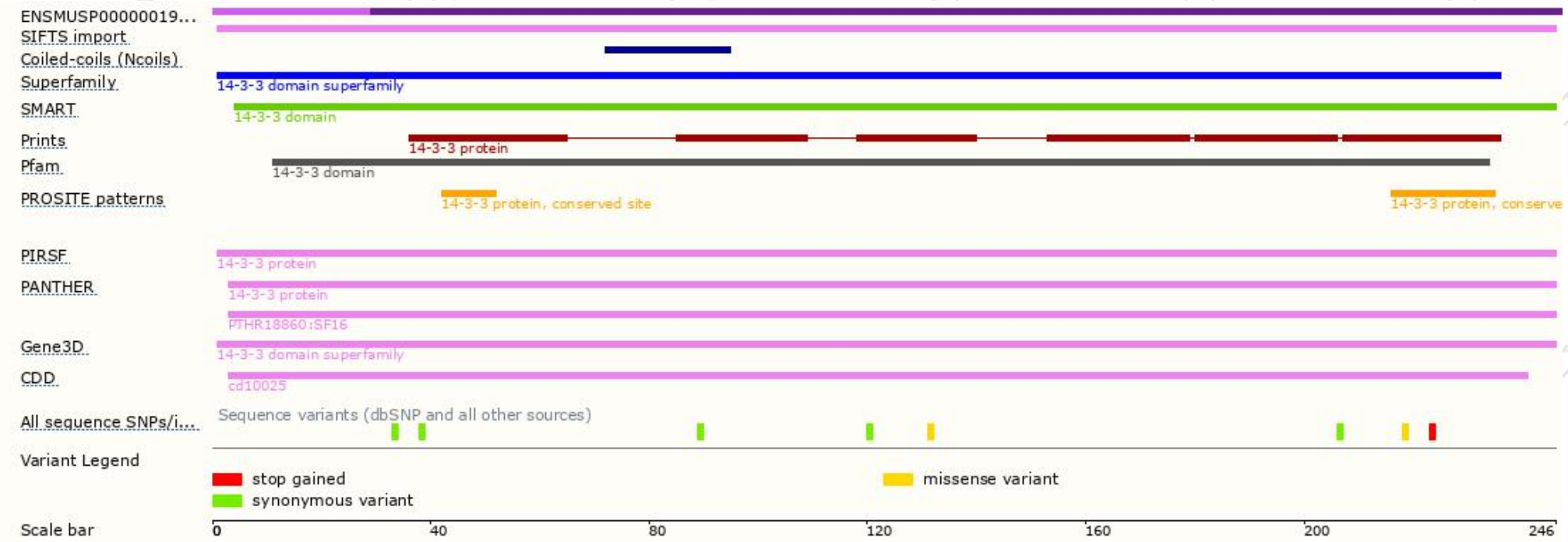
The strategy is based on the design of *Ywhah-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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