

Yeats2 Cas9-CKO Strategy

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Project Overview

Project Name

Yeats2

Project type

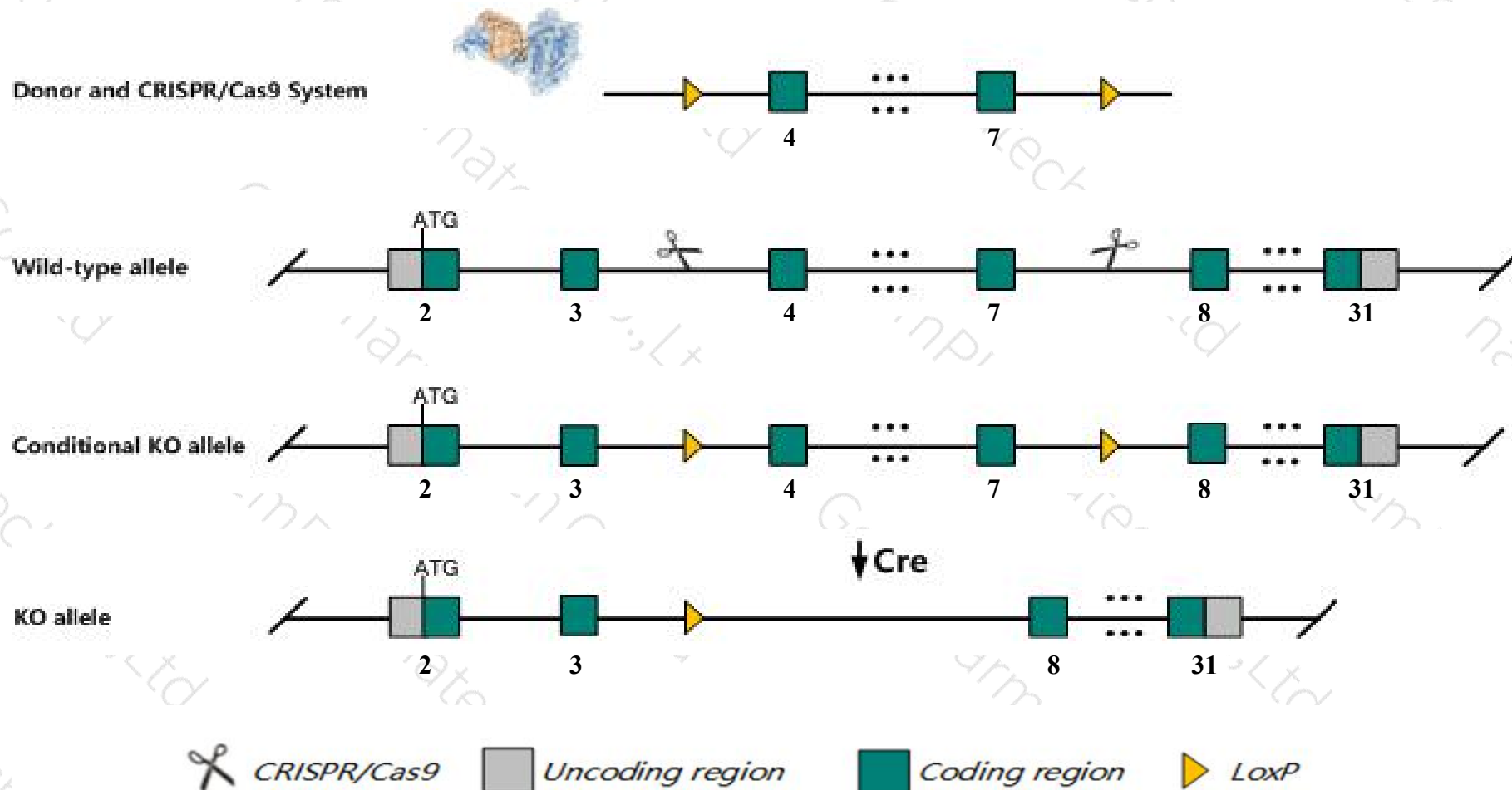
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Yeats2* gene. The schematic diagram is as follows:



- The *Yeats2* gene has 14 transcripts. According to the structure of *Yeats2* gene, exon4-exon7 of *Yeats2*-202 (ENSMUST00000115560.3) transcript is recommended as the knockout region. The region contains 617bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Yeats2* 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.

- Transcript *Yeats2* -203,205,206,207,210,213,214 may not be affected.
- The *Yeats2* gene is located on the Chr16. 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)

Yeats2 YEATS domain containing 2 [Mus musculus (house mouse)]

Gene ID: 208146, updated on 31-Jan-2019

Summary



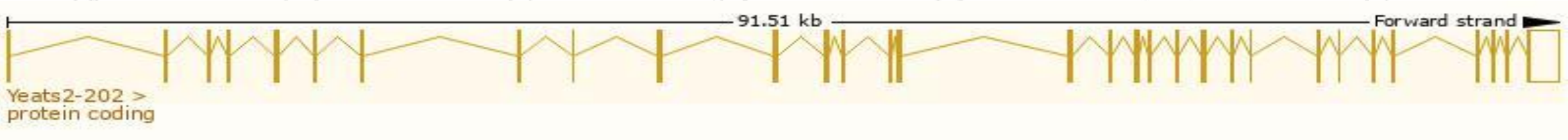
Official Symbol	Yeats2 provided by MGI
Official Full Name	YEATS domain containing 2 provided by MGI
Primary source	MGI:MGI:2447762
See related	Ensembl:ENSMUSG00000041215
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	BC042768, mKIAA1197
Expression	Broad expression in CNS E11.5 (RPKM 38.3), CNS E14 (RPKM 32.8) and 25 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

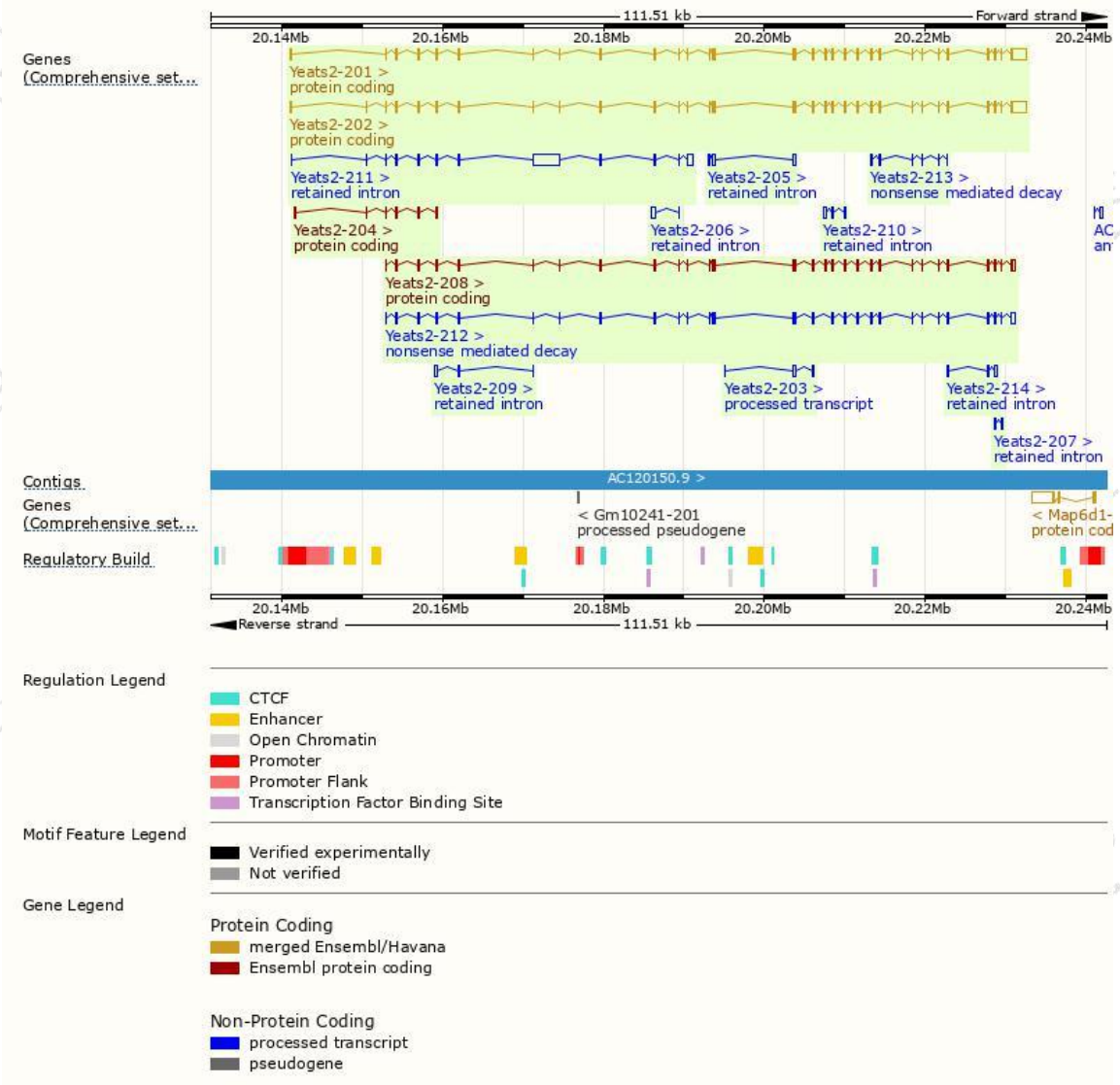
The gene has 14 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Yeats2-202	ENSMUST00000115560.3	6112	1407aa	Protein coding	CCDS49790	Q3TUF7	TSL:5 GENCODE basic APPRIS ALT2
Yeats2-201	ENSMUST00000090052.10	5997	1354aa	Protein coding	CCDS28043	Q3TUF7	TSL:1 GENCODE basic APPRIS P3
Yeats2-208	ENSMUST00000232019.1	4559	1369aa	Protein coding	-	A0A338P697	CDS 5' incomplete
Yeats2-204	ENSMUST00000231705.1	772	218aa	Protein coding	-	A0A338P6P2	CDS 3' incomplete
Yeats2-212	ENSMUST00000232338.1	4405	844aa	Nonsense mediated decay	-	A0A338P689	
Yeats2-213	ENSMUST00000232613.1	563	142aa	Nonsense mediated decay	-	A0A338P7J1	CDS 5' incomplete
Yeats2-203	ENSMUST00000231671.1	455	No protein	Processed transcript	-	-	
Yeats2-211	ENSMUST00000232172.1	5671	No protein	Retained intron	-	-	
Yeats2-210	ENSMUST00000232094.1	728	No protein	Retained intron	-	-	
Yeats2-205	ENSMUST00000231795.1	719	No protein	Retained intron	-	-	
Yeats2-214	ENSMUST00000232671.1	714	No protein	Retained intron	-	-	
Yeats2-206	ENSMUST00000231861.1	665	No protein	Retained intron	-	-	
Yeats2-209	ENSMUST00000232054.1	471	No protein	Retained intron	-	-	
Yeats2-207	ENSMUST00000231997.1	406	No protein	Retained intron	-	-	

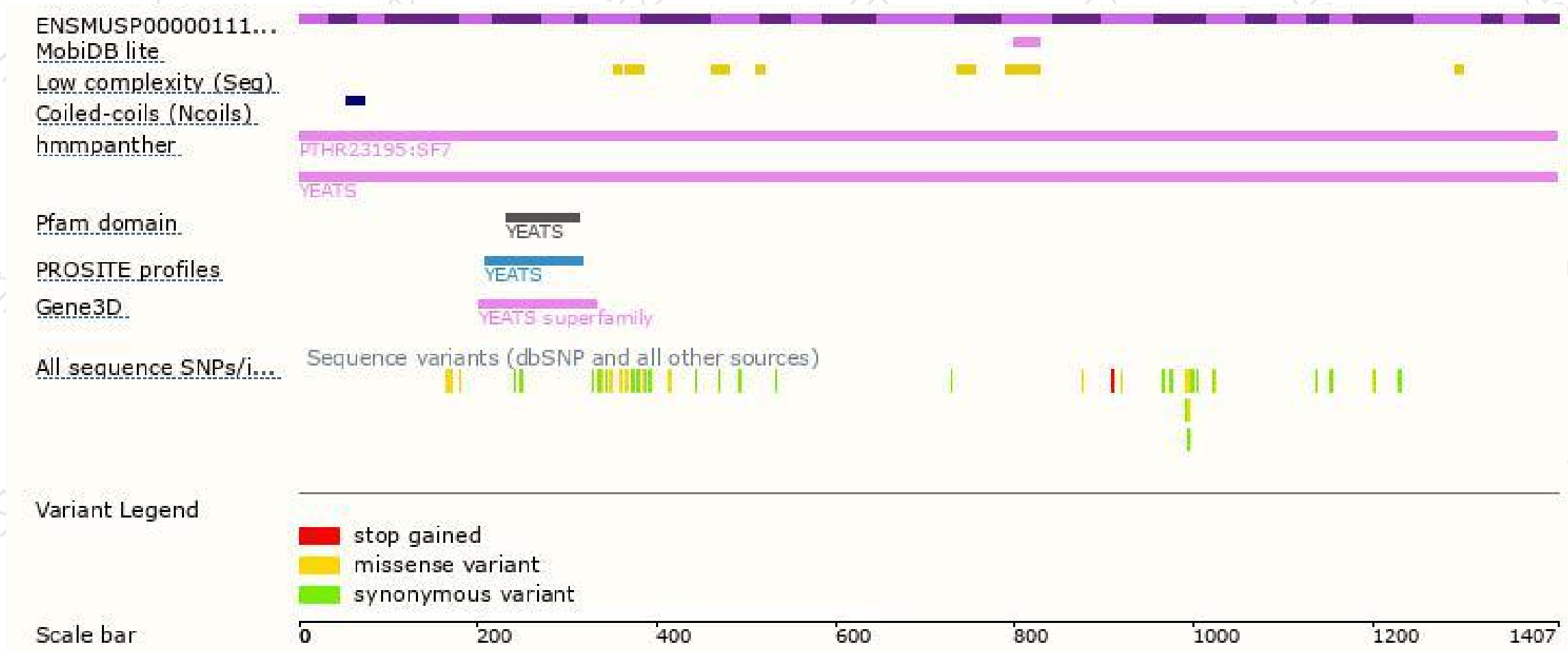
The strategy is based on the design of *Yeats2-202* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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