

Dhx34 Cas9-CKO Strategy

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Design Date:2020-3-12

Project Overview

Project Name

Dhx34

Project type

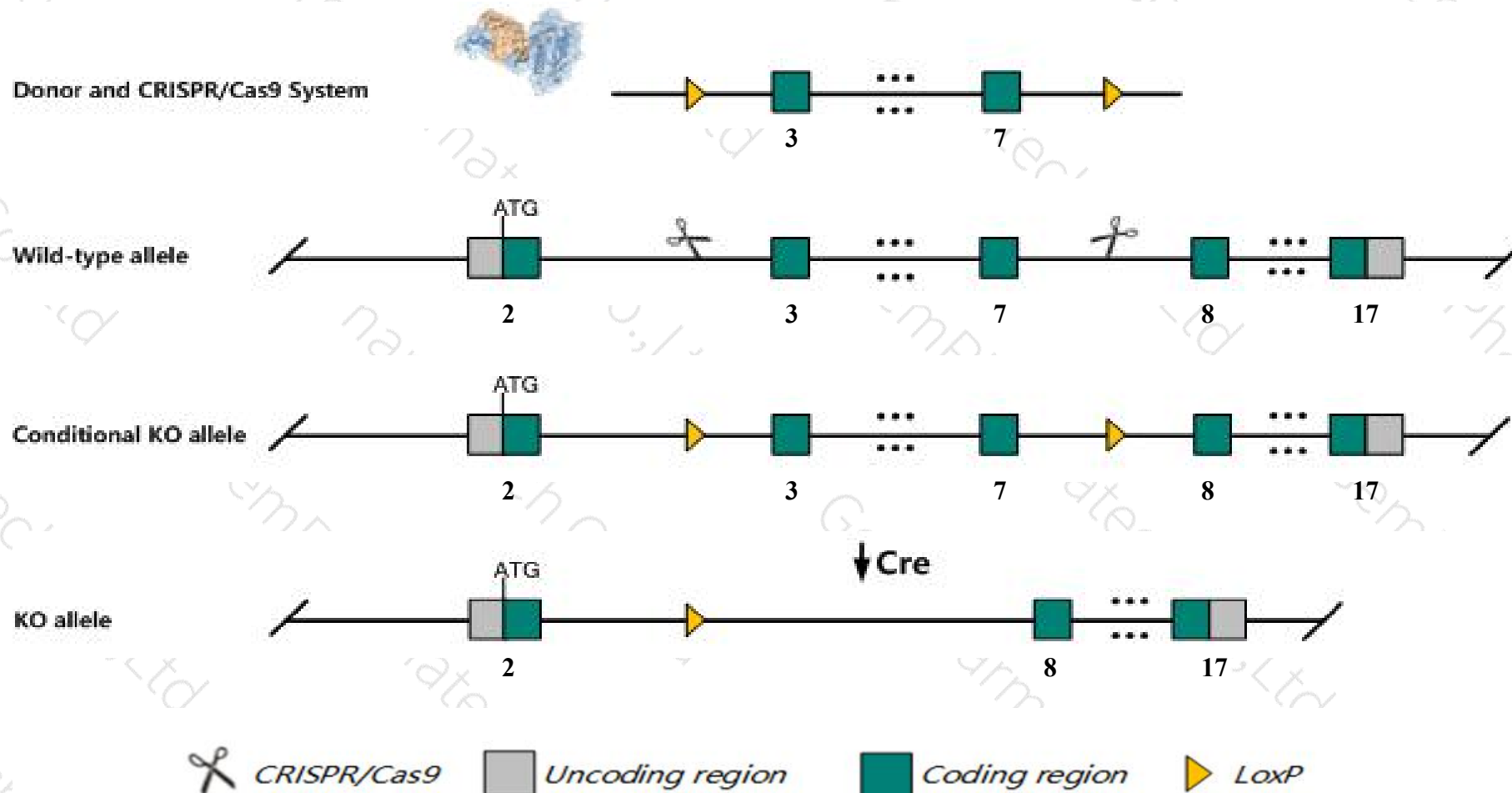
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Dhx34* gene. The schematic diagram is as follows:



- The *Dhx34* gene has 7 transcripts. According to the structure of *Dhx34* gene, exon3-exon7 of *Dhx34-201* (ENSMUST00000094816.2) transcript is recommended as the knockout region. The region contains 1063bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Dhx34* 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

- The *Dhx34* gene is located on the Chr7. 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)

Dhx34 DEAH (Asp-Glu-Ala-His) box polypeptide 34 [*Mus musculus* (house mouse)]

Gene ID: 71723, updated on 27-Feb-2020

Summary

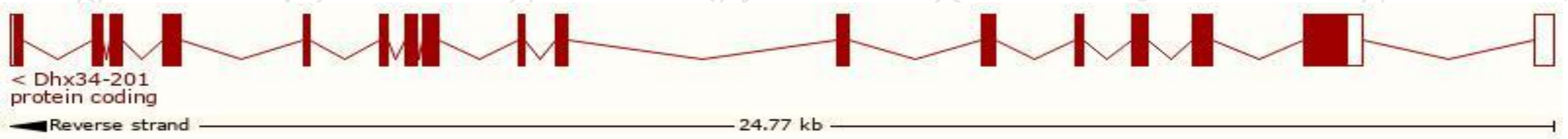
Official Symbol	Dhx34 provided by MGI
Official Full Name	DEAH (Asp-Glu-Ala-His) box polypeptide 34 provided by MGI
Primary source	MGI:MGI:1918973
See related	Ensembl:ENSMUSG000000006019
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Ddx34; mKIAA0134; 1200013B07Rik; 1810012L18Rik
Expression	Ubiquitous expression in thymus adult (RPKM 14.7), spleen adult (RPKM 13.8) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

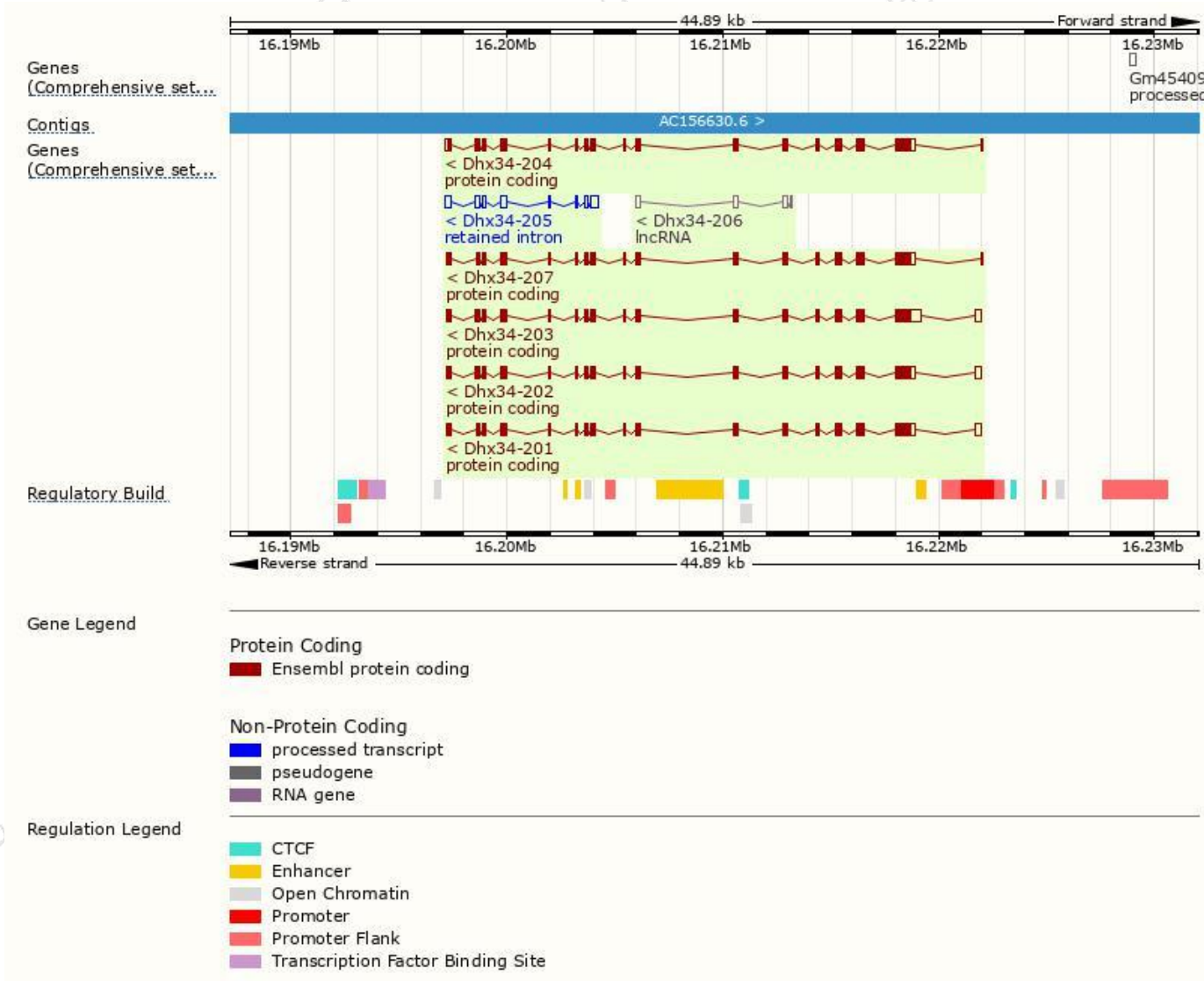
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Dhx34-201	ENSMUST00000094816.2	4073	1145aa	Protein coding	CCDS39783	A0A0R4J217	TSL:1 GENCODE basic APPRIS P2
Dhx34-207	ENSMUST00000163968.7	3801	1145aa	Protein coding	CCDS39783	A0A0R4J217	TSL:1 GENCODE basic APPRIS P2
Dhx34-203	ENSMUST00000119102.7	4310	1145aa	Protein coding	-	D3YTV3	TSL:5 GENCODE basic APPRIS ALT2
Dhx34-202	ENSMUST00000118795.7	4076	1145aa	Protein coding	-	D3YTV3	TSL:5 GENCODE basic APPRIS ALT2
Dhx34-204	ENSMUST00000121123.7	3880	1145aa	Protein coding	-	D3YTV3	TSL:5 GENCODE basic APPRIS ALT2
Dhx34-205	ENSMUST00000128452.1	1616	No protein	Retained intron	-	-	TSL:5
Dhx34-206	ENSMUST00000133518.1	652	No protein	lncRNA	-	-	TSL:3

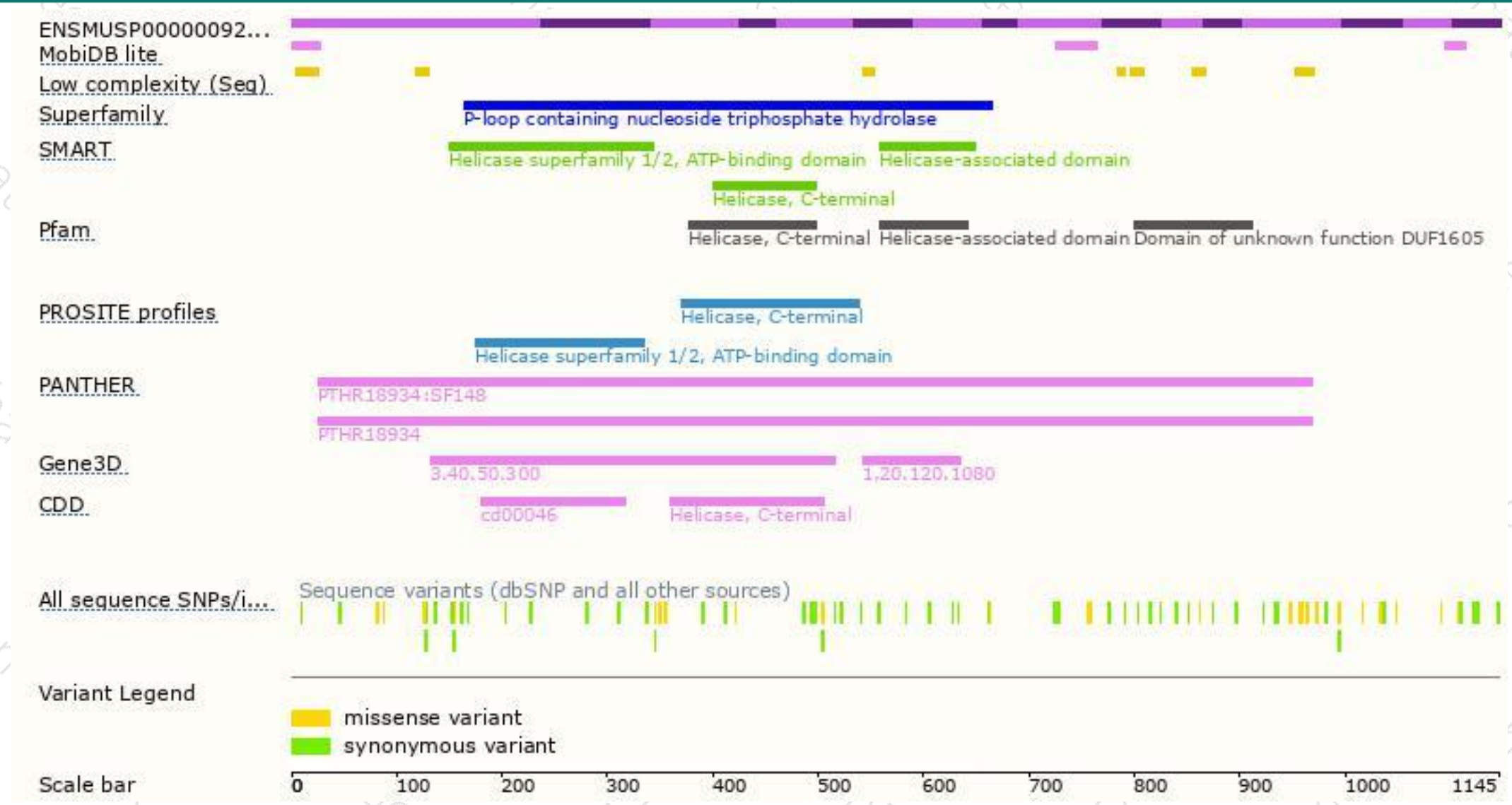
The strategy is based on the design of *Dhx34-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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