

Fbh1 Cas9-KO Strategy

Designer:	Jing Jin
Reviewer:	Yang Zeng
Design Date:	2018-6-11

Project Overview



Project Name

Fbh1

Project type

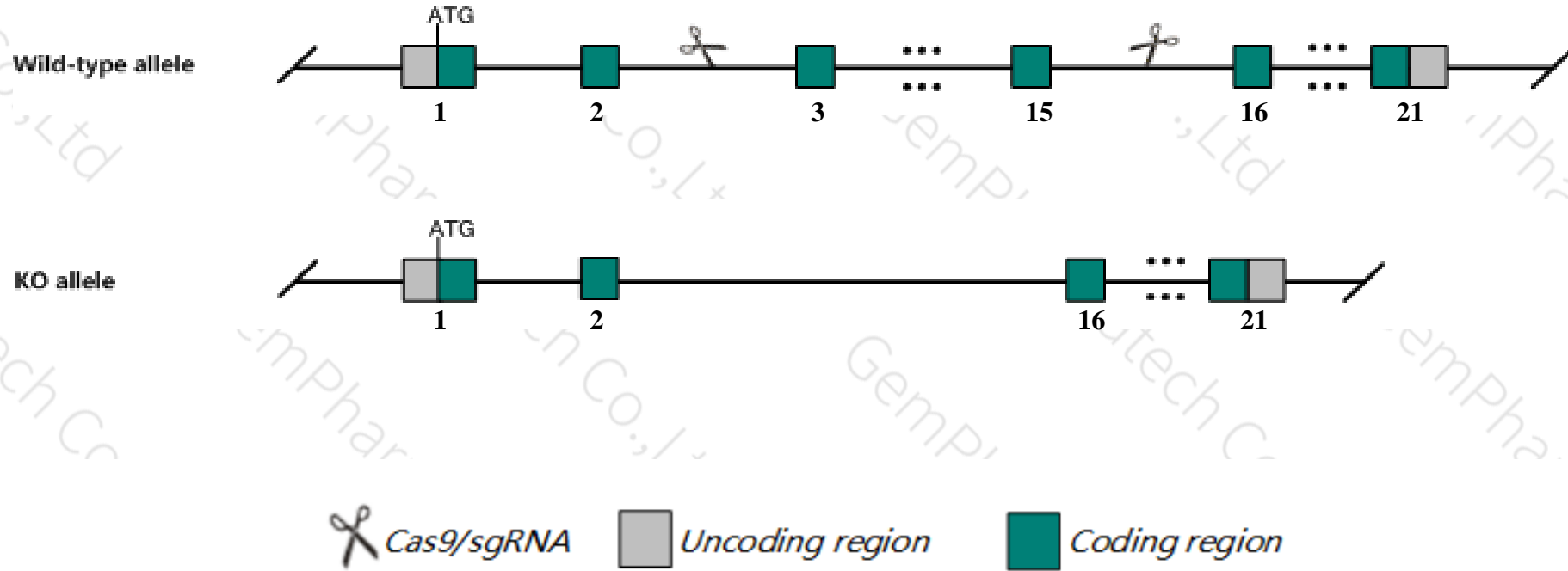
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Fbh1* gene. The schematic diagram is as follows:



- The *Fbh1* gene has 10 transcripts. According to the structure of *Fbh1* gene, exon3-exon15 of *Fbh1-201* (ENSMUST00000071564.13) transcript is recommended as the knockout region. The region contains 2162bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Fbh1* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA 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.

- Transcript *Fbh1-207/209* may not be affected.
- The *Fbh1* 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 gene knockout on gene transcription, RNA splicing and protein translation cannot be predicted at the existing technology level.

Gene information (NCBI)

Fbh1 F-box DNA helicase 1 [Mus musculus (house mouse)]

Gene ID: 50755, updated on 3-Feb-2019

Summary

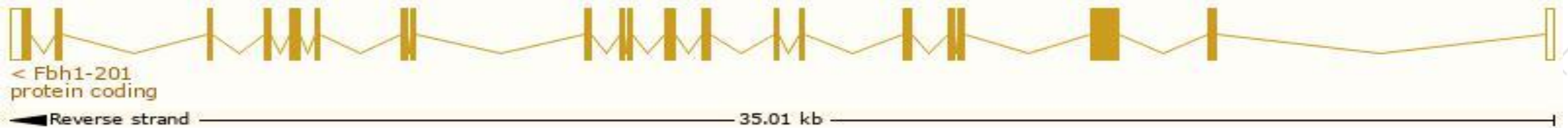
Official Symbol	Fbh1 provided by MGI
Official Full Name	F-box DNA helicase 1 provided by MGI
Primary source	MGI:MGI:1354699
See related	Ensembl:ENSMUSG00000058594
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AU015756, Fbx18, Fbxo18
Expression	Ubiquitous expression in CNS E14 (RPKM 14.0), limb E14.5 (RPKM 13.6) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

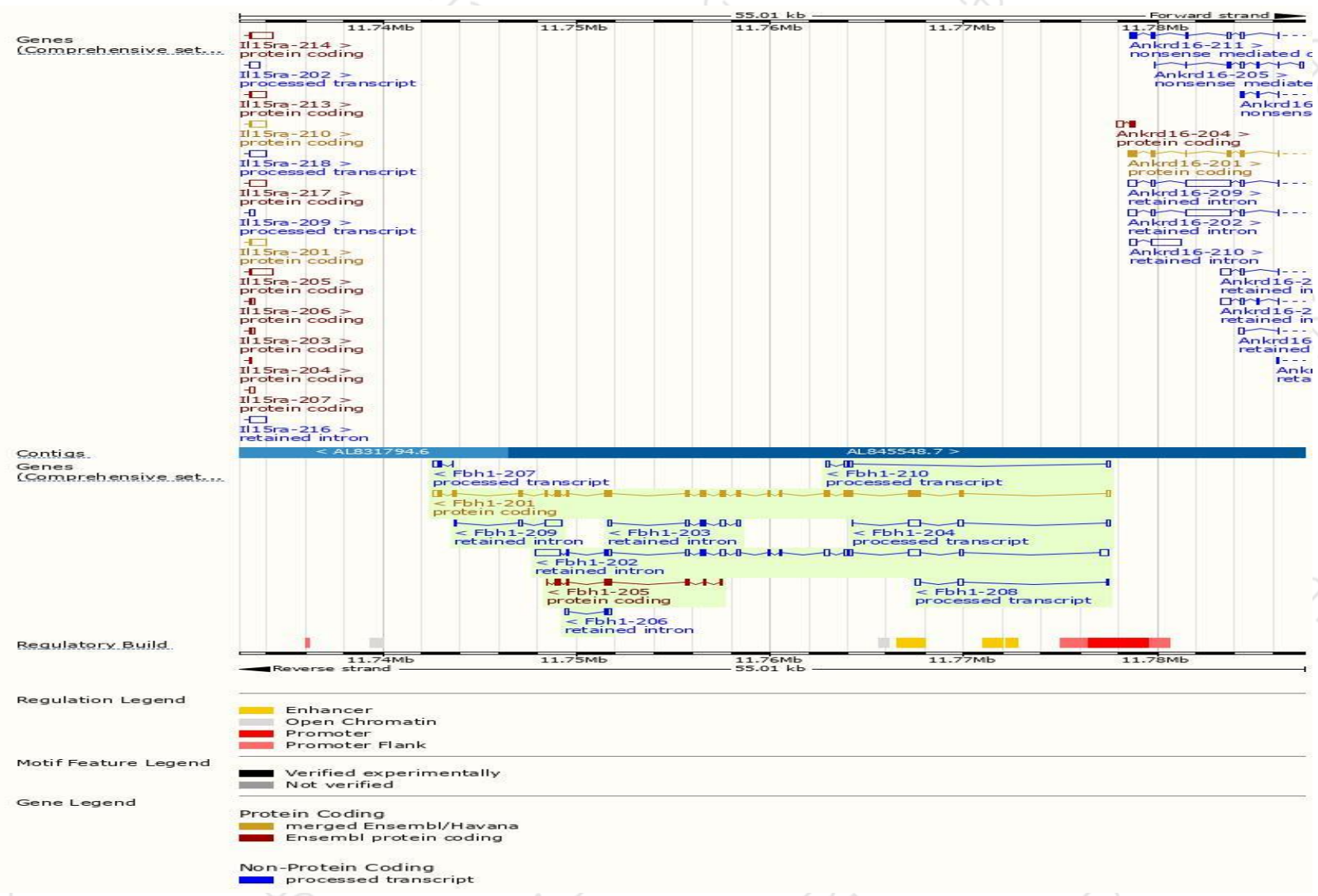
The gene has 10 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Fbh1-201	ENSMUST00000071564.13	3567	1042aa	Protein coding	CCDS15688	Q8K2I9	TSL:1 GENCODE basic APPRIS P1
Fbh1-205	ENSMUST00000131893.1	891	297aa	Protein coding	-	A2AS52	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete TSL:3
Fbh1-204	ENSMUST00000126543.7	898	No protein	Processed transcript	-	-	TSL:5
Fbh1-208	ENSMUST00000151402.2	503	No protein	Processed transcript	-	-	TSL:2
Fbh1-210	ENSMUST00000192171.1	476	No protein	Processed transcript	-	-	TSL:3
Fbh1-207	ENSMUST00000139292.1	358	No protein	Processed transcript	-	-	TSL:5
Fbh1-202	ENSMUST00000123717.7	4118	No protein	Retained intron	-	-	TSL:1
Fbh1-209	ENSMUST00000155604.1	1064	No protein	Retained intron	-	-	TSL:2
Fbh1-203	ENSMUST00000123723.1	820	No protein	Retained intron	-	-	TSL:3
Fbh1-206	ENSMUST00000136633.1	374	No protein	Retained intron	-	-	TSL:2

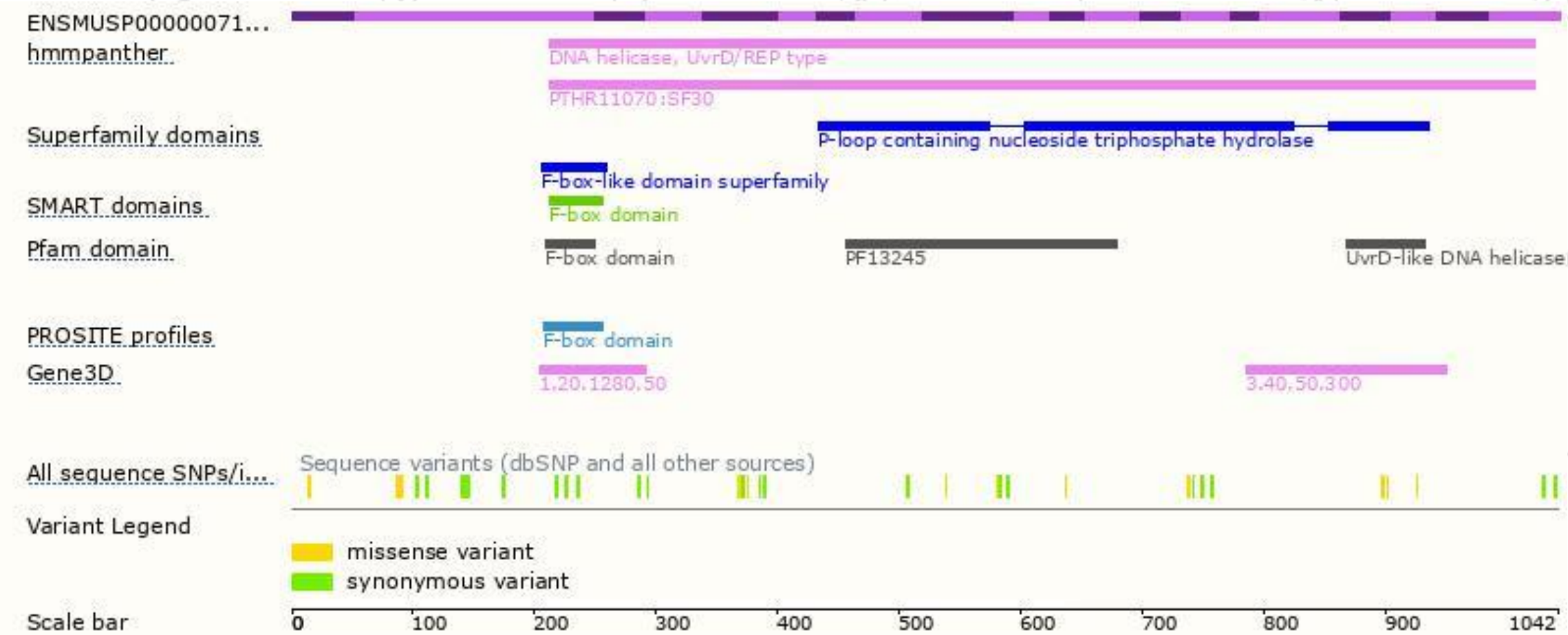
The strategy is based on the design of *Fbh1-201* transcript, The transcription is shown below



Genomic location distribution



Protein domain



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

Tel: 025-5864 1534

