

Aktip Cas9-KO Strategy

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Project Overview

Project Name

Aktip

Project type

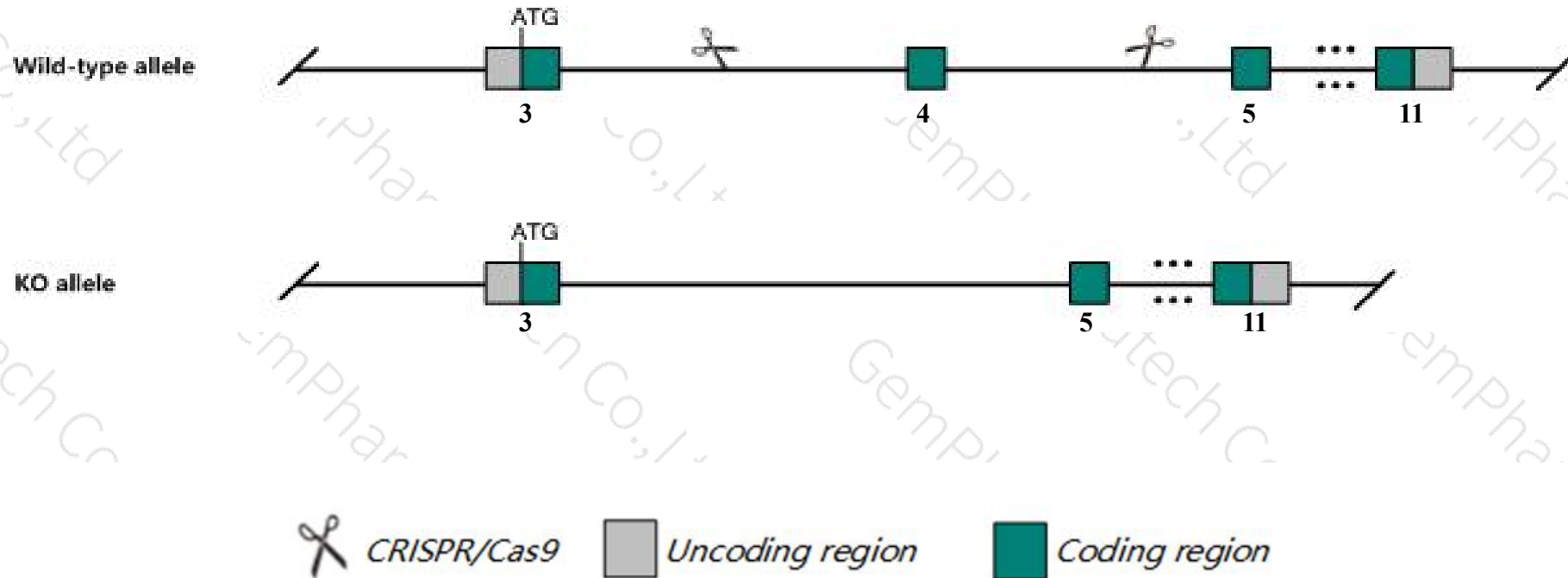
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

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



- The *Aktip* gene has 13 transcripts. According to the structure of *Aktip* gene, exon4 of *Aktip*-202 (ENSMUST00000120213.8) transcript is recommended as the knockout region. The region contains 206bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Aktip* gene. The brief process is as follows: CRISPR/Cas9 system v

- The *Aktip* gene is located on the Chr8. 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)

Aktip thymoma viral proto-oncogene 1 interacting protein [Mus musculus (house mouse)]

Gene ID: 14339, updated on 31-Jan-2019

Summary



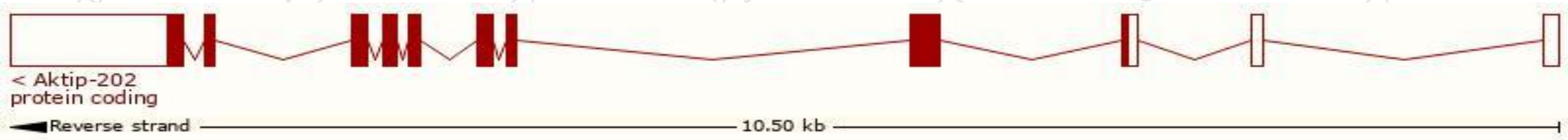
Official Symbol	Aktip provided by MGI
Official Full Name	thymoma viral proto-oncogene 1 interacting protein provided by MGI
Primary source	MGI:MGI:3693832
See related	Ensembl:ENSMUSG000000031667
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AL023020, Fif, Ft, Ft1, Fts
Expression	Ubiquitous expression in cerebellum adult (RPKM 8.7), bladder adult (RPKM 7.7) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

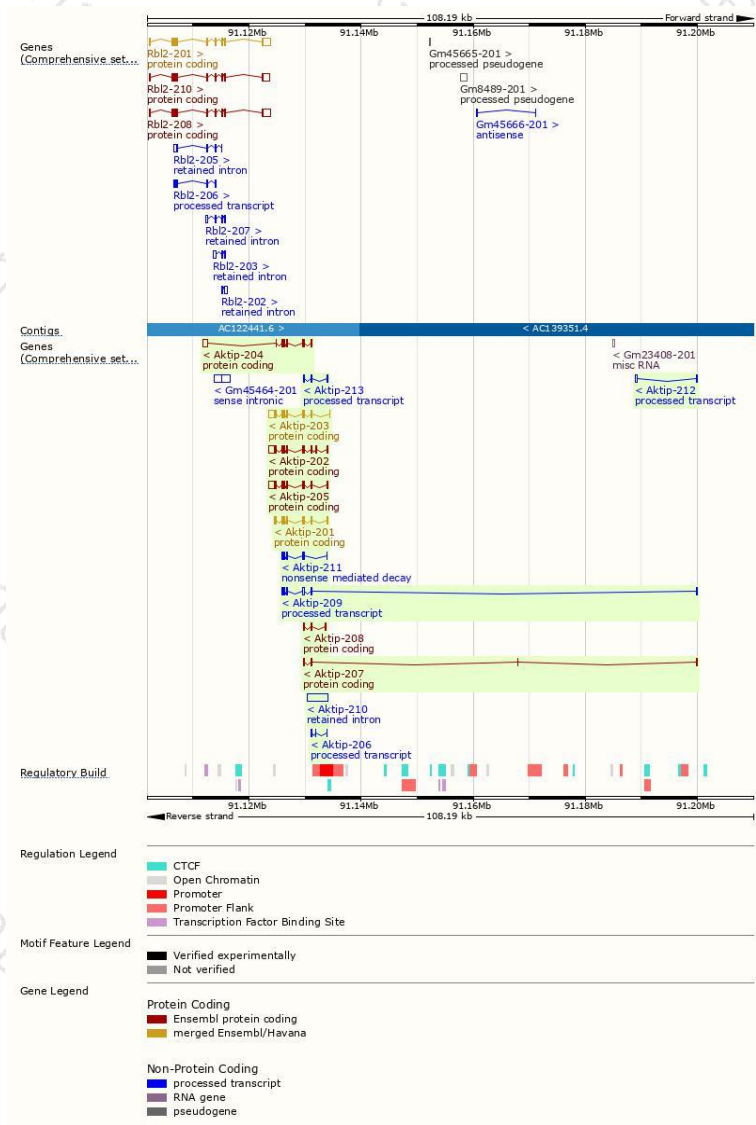
The gene has 13 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Aktip-202	ENSMUST00000120213.8	2200	292aa	Protein coding	CCDS22519	Q64362	TSL:1 GENCODE basic APPRIS P1
Aktip-203	ENSMUST00000120349.7	2153	292aa	Protein coding	CCDS22519	Q64362	TSL:1 GENCODE basic APPRIS P1
Aktip-205	ENSMUST00000125257.2	2079	292aa	Protein coding	CCDS22519	D3Z2J4 Q64362	TSL:1 GENCODE basic APPRIS P1
Aktip-204	ENSMUST00000120426.8	1687	258aa	Protein coding	CCDS85582	D3Z632	TSL:1 GENCODE basic
Aktip-201	ENSMUST00000109609.8	1171	292aa	Protein coding	CCDS22519	Q64362	TSL:1 GENCODE basic APPRIS P1
Aktip-208	ENSMUST00000209444.1	474	55aa	Protein coding	-	A0A1B0GSS3	CDS 3' incomplete TSL:3
Aktip-207	ENSMUST00000209311.1	391	51aa	Protein coding	-	A0A1B0GS90	CDS 3' incomplete TSL:2
Aktip-211	ENSMUST00000211050.1	738	32aa	Nonsense mediated decay	-	A0A1B0GS26	CDS 5' incomplete TSL:3
Aktip-209	ENSMUST00000210426.1	811	No protein	Processed transcript	-	-	TSL:5
Aktip-212	ENSMUST00000211576.1	450	No protein	Processed transcript	-	-	TSL:3
Aktip-213	ENSMUST00000211618.1	409	No protein	Processed transcript	-	-	TSL:2
Aktip-206	ENSMUST00000153201.2	139	No protein	Processed transcript	-	-	TSL:1
Aktip-210	ENSMUST00000211042.1	3533	No protein	Retained intron	-	-	TSL:NA

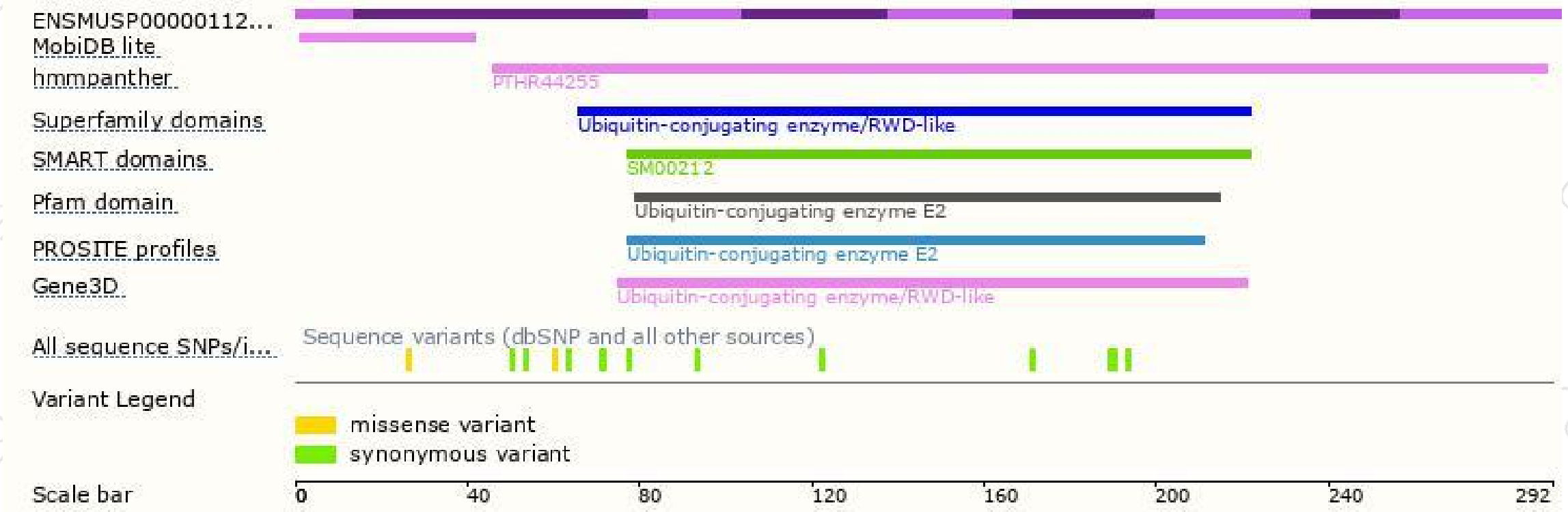
The strategy is based on the design of *Aktip-202* transcript,The transcription is shown below



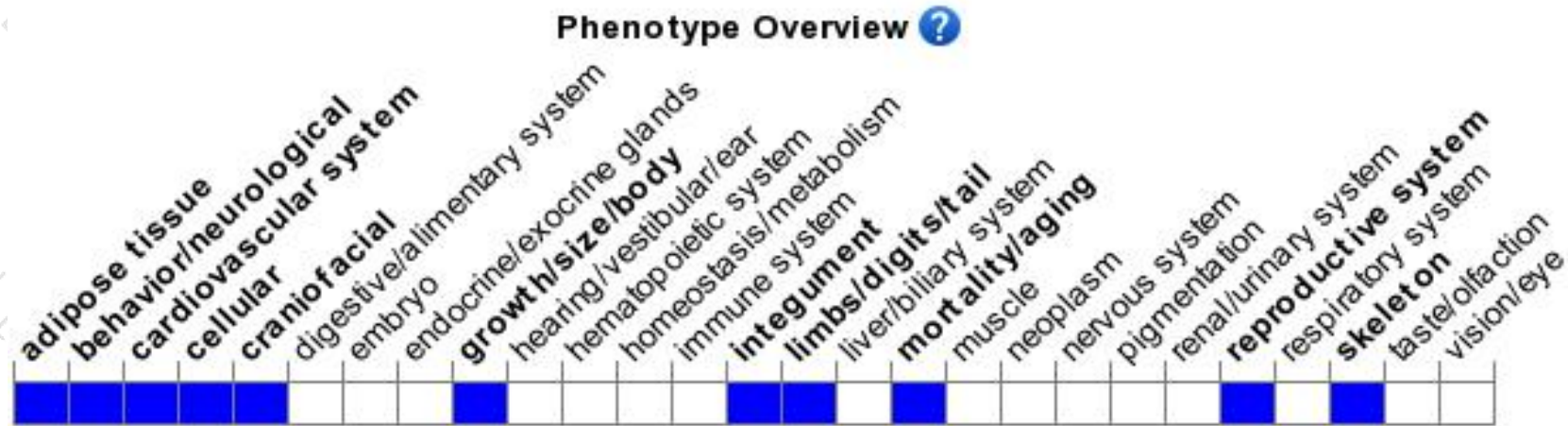
Genomic location distribution



Protein domain



Mouse phenotype description(MGI)



Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).

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

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