

Kat2b Cas9-KO Strategy

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Project Overview



Project Name

Kat2b

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Kat2b* gene. The schematic diagram is as follows:



- The *Kat2b* gene has 7 transcripts. According to the structure of *Kat2b* gene, exon2 of *Kat2b-201* (ENSMUST00000000724.14) transcript is recommended as the knockout region. The region contains 127bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Kat2b* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a null allele exhibit no abnormal phenotype.
- Transcript *Kat2b-205&207* may not be affected. And the effect on transcript *Kat2b-204&206* is unknown.
- The knockout region is near to the N-terminal of *Gm6919* gene, this strategy may influence the regulatory function of the N-terminal of *Gm6919* gene.
- The *Kat2b* gene is located on the Chr17. 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)

Kat2b K(lysine) acetyltransferase 2B [Mus musculus (house mouse)]

Gene ID: 18519, updated on 3-Feb-2019

Summary



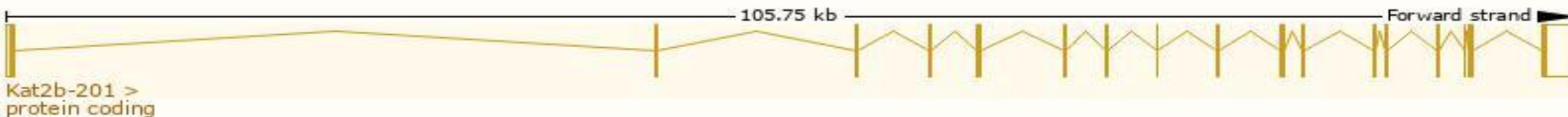
Official Symbol	Kat2b provided by MGI
Official Full Name	K(lysine) acetyltransferase 2B provided by MGI
Primary source	MGI:MGI:1343094
See related	Ensembl:ENSMUSG00000000708
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	A930006P13Rik, AI461839, AW536563, Pcaf, p/CAF
Expression	Ubiquitous expression in adrenal adult (RPKM 12.8), bladder adult (RPKM 11.9) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

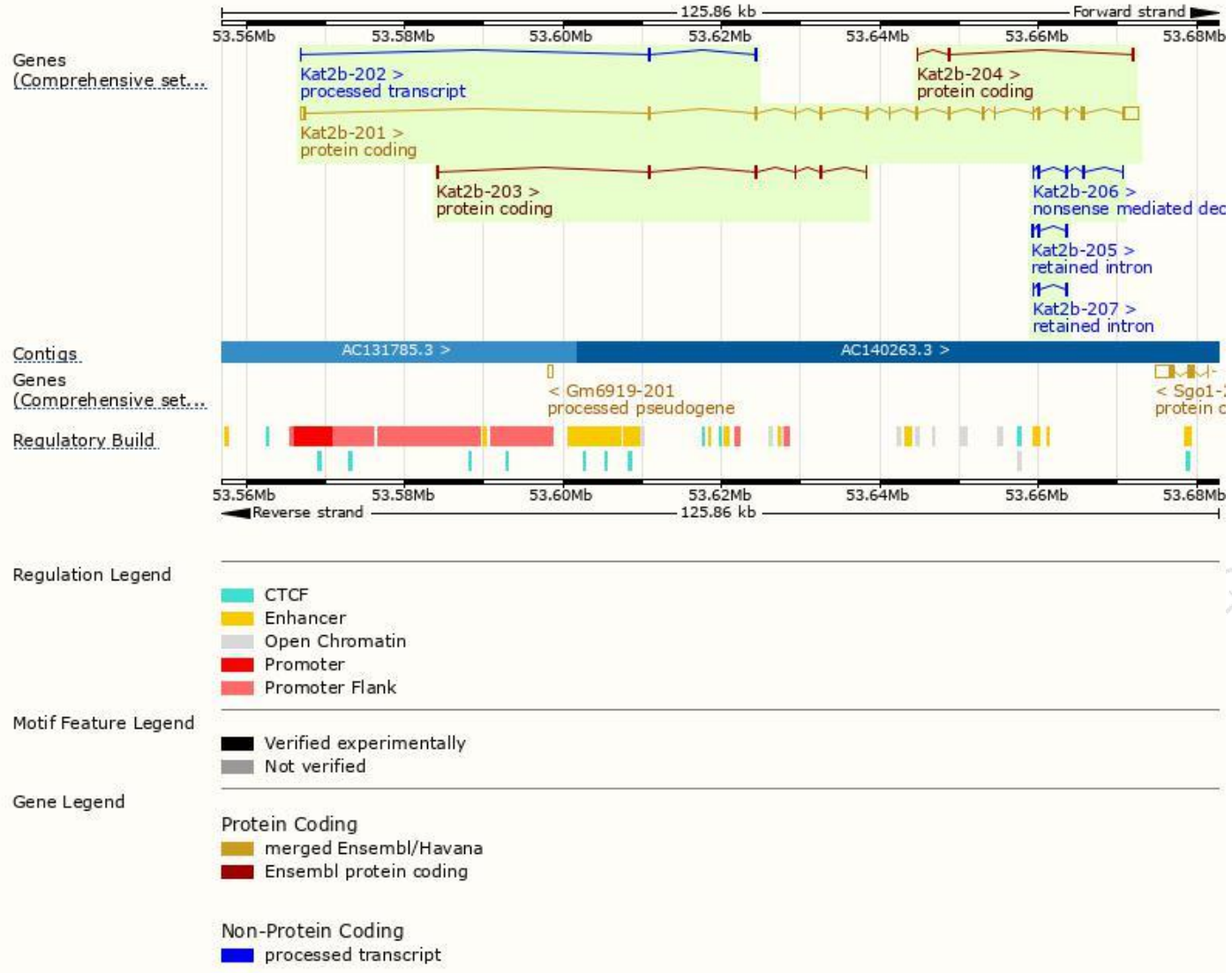
The gene has 7 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Kat2b-201	ENSMUST00000000724.14	4653	813aa	Protein coding	CCDS28880	B2RR30 Q9JHD1	TSL:1 GENCODE basic APPRIS P1
Kat2b-203	ENSMUST00000164390.1	673	211aa	Protein coding	-	E9Q1F7	CDS 3' incomplete TSL:5
Kat2b-204	ENSMUST00000166525.1	439	66aa	Protein coding	-	F6ZCH1	CDS 5' incomplete TSL:3
Kat2b-206	ENSMUST00000171072.1	455	118aa	Nonsense mediated decay	-	F6SIC5	CDS 5' incomplete TSL:5
Kat2b-202	ENSMUST00000163648.1	322	No protein	Processed transcript	-	-	TSL:3
Kat2b-205	ENSMUST00000167092.7	450	No protein	Retained intron	-	-	TSL:2
Kat2b-207	ENSMUST00000172160.1	402	No protein	Retained intron	-	-	TSL:2

The strategy is based on the design of *Kat2b-201* transcript, The transcription is shown below



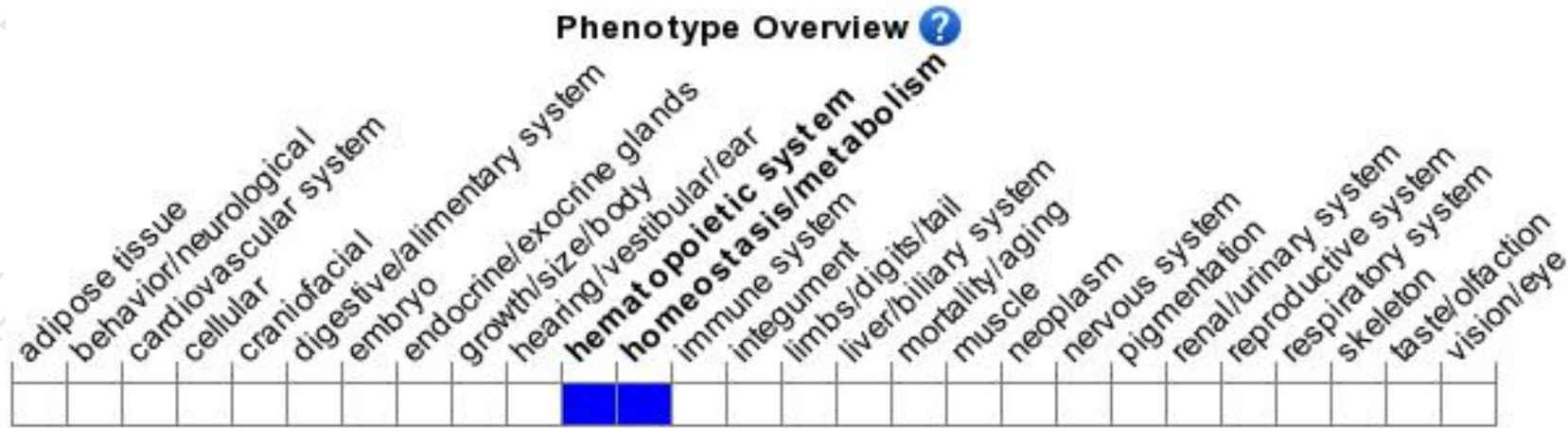
Genomic location distribution



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/>).

According to the existing MGI data, Mice homozygous for a null allele exhibit no abnormal phenotype.

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

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