

***Fastkd2* Cas9-KO Strategy**

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Project Overview

Project Name

Fastkd2

Project type

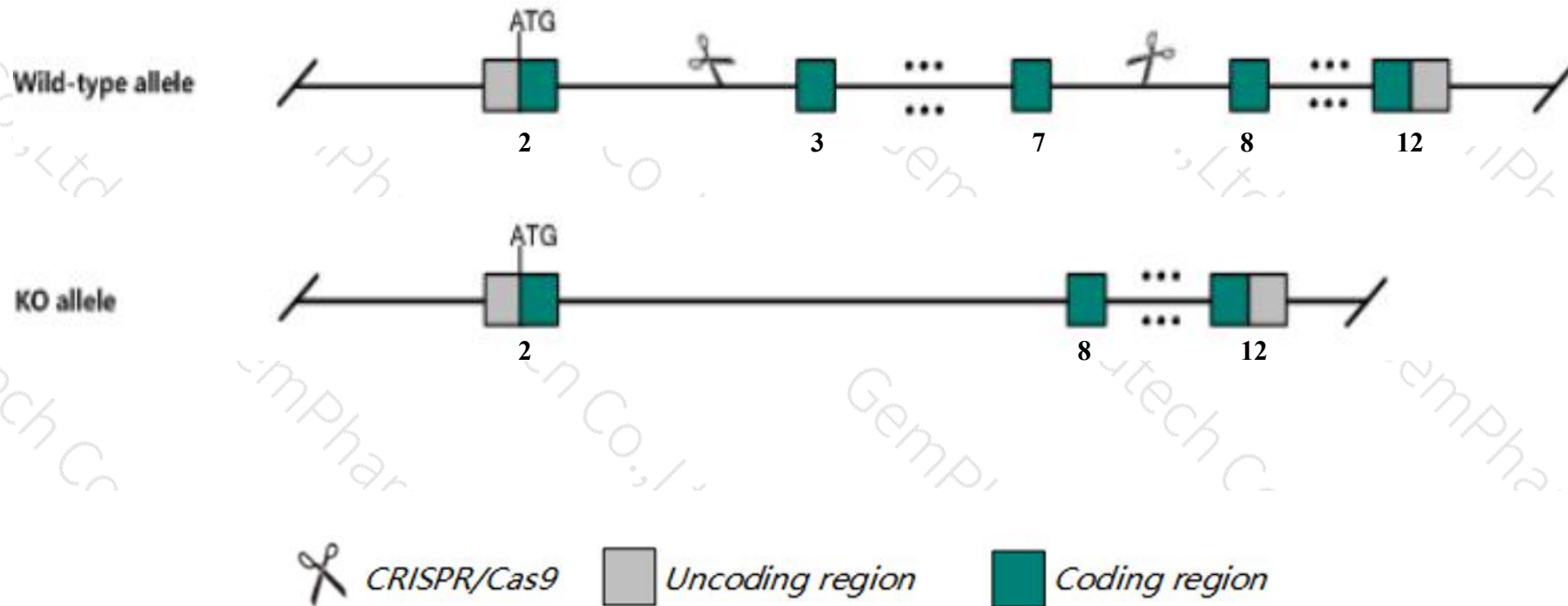
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Fastkd2* gene. The schematic diagram is as follows:



- The *Fastkd2* gene has 6 transcripts. According to the structure of *Fastkd2* gene, exon3-exon7 of *Fastkd2-201* (ENSMUST00000027103.6) transcript is recommended as the knockout region. The region contains 650bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Fastkd2* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Fastkd2* gene is located on the Chr1. 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.
- The knockout region is about 3.9kb from the 5-terminal of *Mdh1b* gene, which may affect its 5-terminal regulatory function.
- 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)

Fastkd2 FAST kinase domains 2 [Mus musculus (house mouse)]

Gene ID: 75619, updated on 31-Jan-2019

Summary



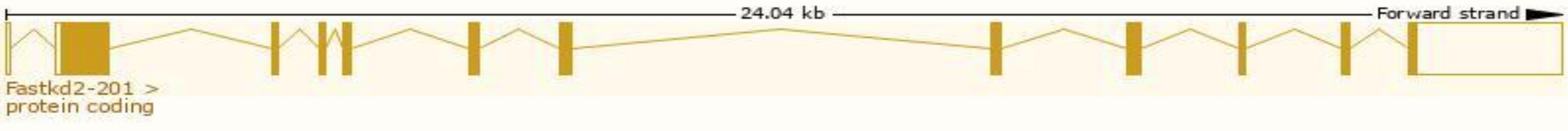
Official Symbol	Fastkd2 provided by MGI
Official Full Name	FAST kinase domains 2 provided by MGI
Primary source	MGI:MGI:1922869
See related	Ensembl:ENSMUSG000000025962
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2810421I24Rik
Expression	Ubiquitous expression in placenta adult (RPKM 6.3), CNS E11.5 (RPKM 5.2) and 24 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

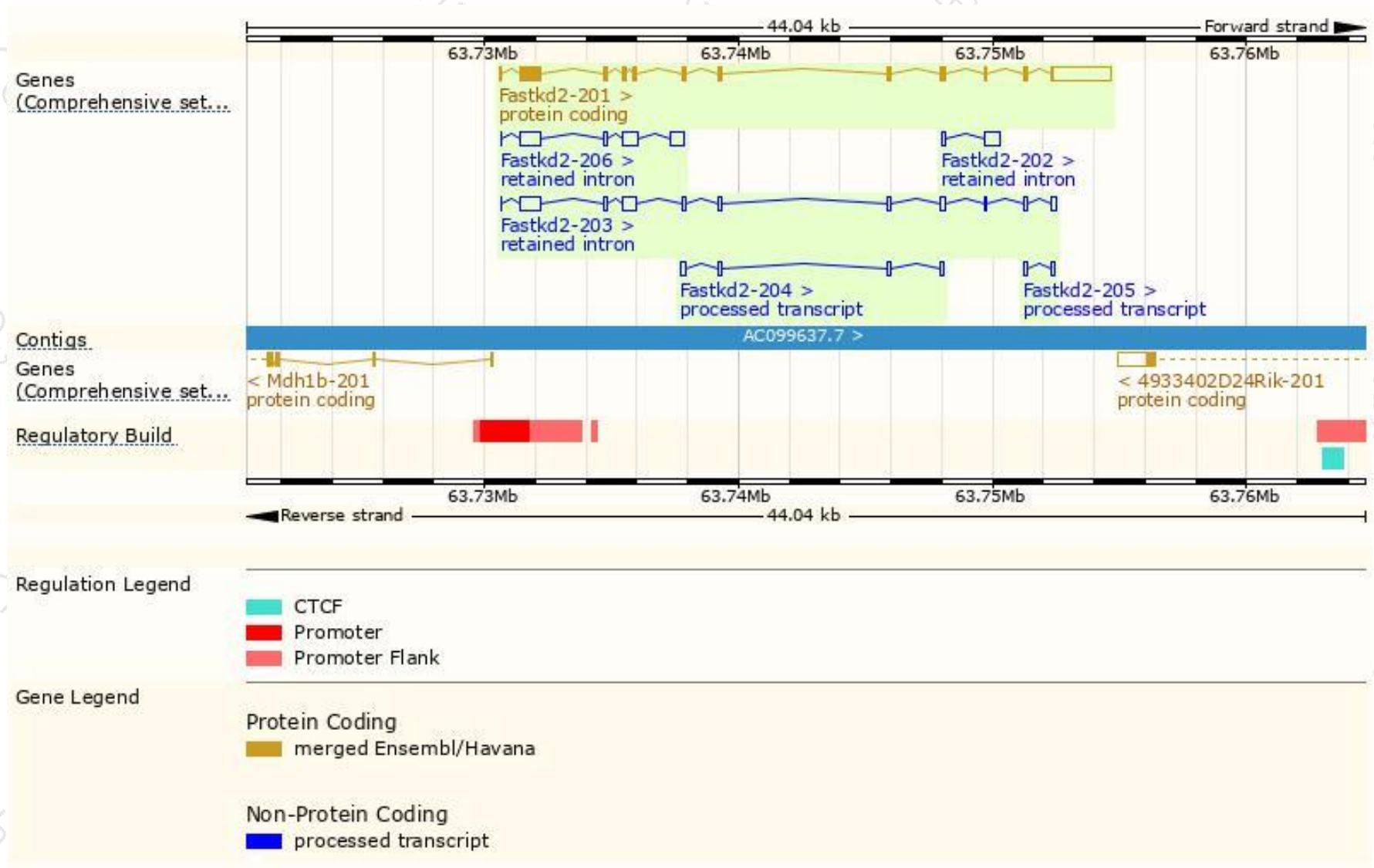
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Fastkd2-201	ENSMUST00000027103.6	4486	689aa	Protein coding	CCDS15001	Q922E6	TSL:1 GENCODE basic APPRIS P1
Fastkd2-203	ENSMUST00000128621.7	2613	No protein	Retained intron	-	-	TSL:1
Fastkd2-206	ENSMUST00000148758.7	2117	No protein	Retained intron	-	-	TSL:5
Fastkd2-202	ENSMUST00000123945.1	741	No protein	Retained intron	-	-	TSL:2
Fastkd2-204	ENSMUST00000131478.1	642	No protein	lncRNA	-	-	TSL:2
Fastkd2-205	ENSMUST00000134454.1	327	No protein	lncRNA	-	-	TSL:2

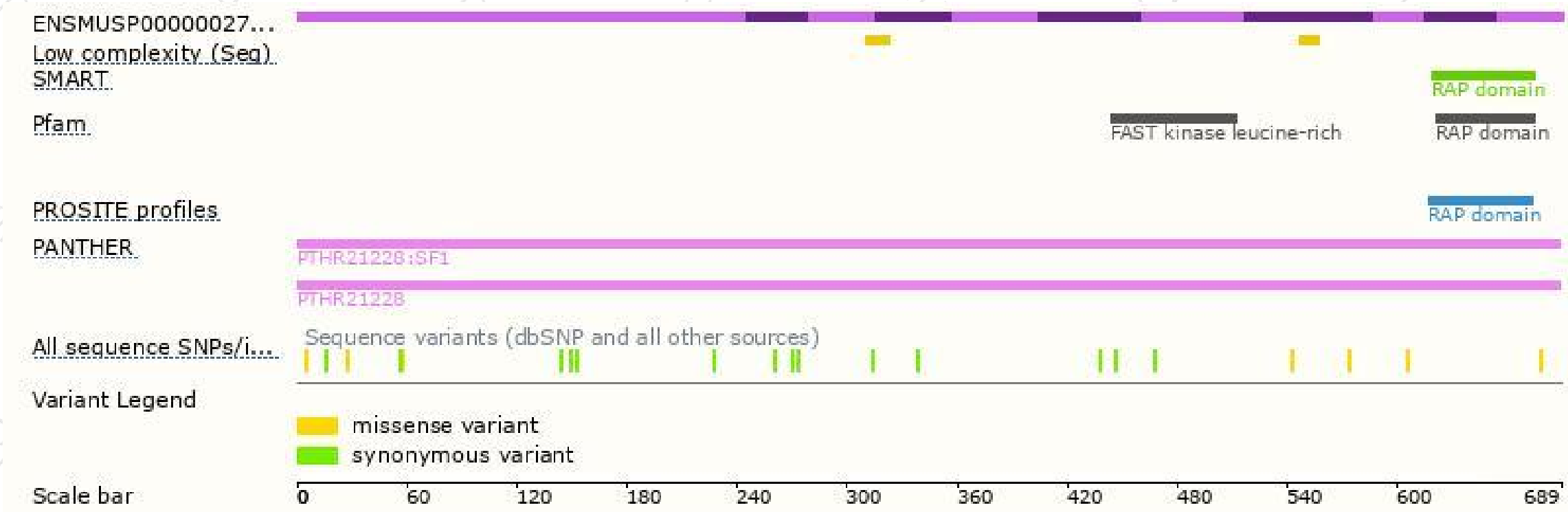
The strategy is based on the design of *Fastkd2-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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