

Foxk2 Cas9-KO Strategy

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Project Overview

Project Name

Foxk2

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Foxk2* gene. The schematic diagram is as follows:



- The *Foxk2* gene has 3 transcripts. According to the structure of *Foxk2* gene, exon2-exon8 of *Foxk2-201* (ENSMUST00000106113.1) transcript is recommended as the knockout region. The region contains 1367bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Foxk2* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Foxk2* gene is located on the Chr11. 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)

Foxk2 forkhead box K2 [Mus musculus (house mouse)]

Gene ID: 68837, updated on 31-Jan-2019

Summary



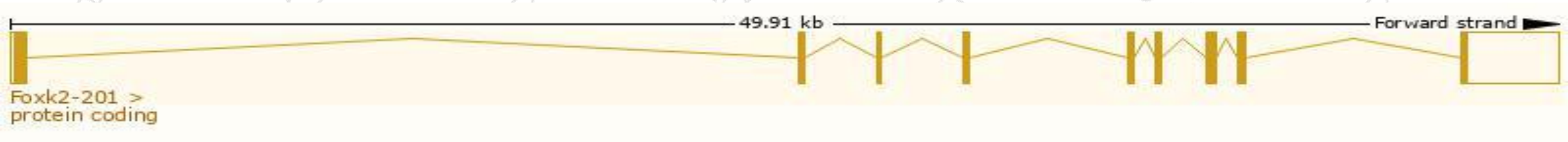
Official Symbol	Foxk2 provided by MGI
Official Full Name	forkhead box K2 provided by MGI
Primary source	MGI:MGI:1916087
See related	Ensembl:ENSMUSG00000039275
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	1110054H05Rik, 5730434B08Rik, 6230415M23Rik, ILF, Ilf1
Expression	Ubiquitous expression in whole brain E14.5 (RPKM 17.4), ovary adult (RPKM 17.3) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

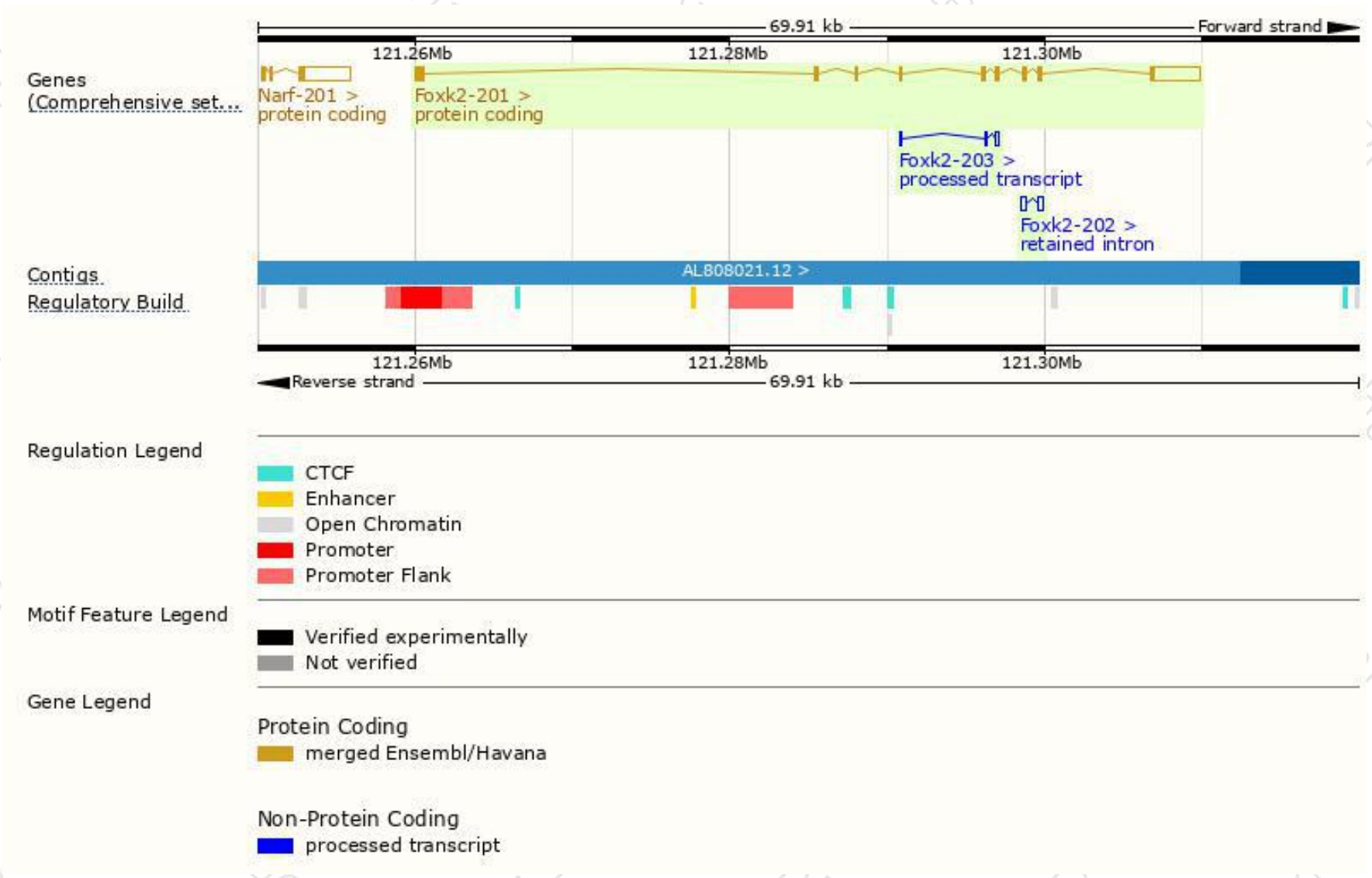
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Foxk2-201	ENSMUST00000106113.1	5029	651aa	Protein coding	CCDS36393	Q3UCQ1	TSL:1 GENCODE basic APPRIS P1
Foxk2-203	ENSMUST00000153579.1	452	No protein	Processed transcript	-	-	TSL:5
Foxk2-202	ENSMUST00000151492.1	607	No protein	Retained intron	-	-	TSL:2

The strategy is based on the design of *Foxk2-201* transcript,The transcription is shown below



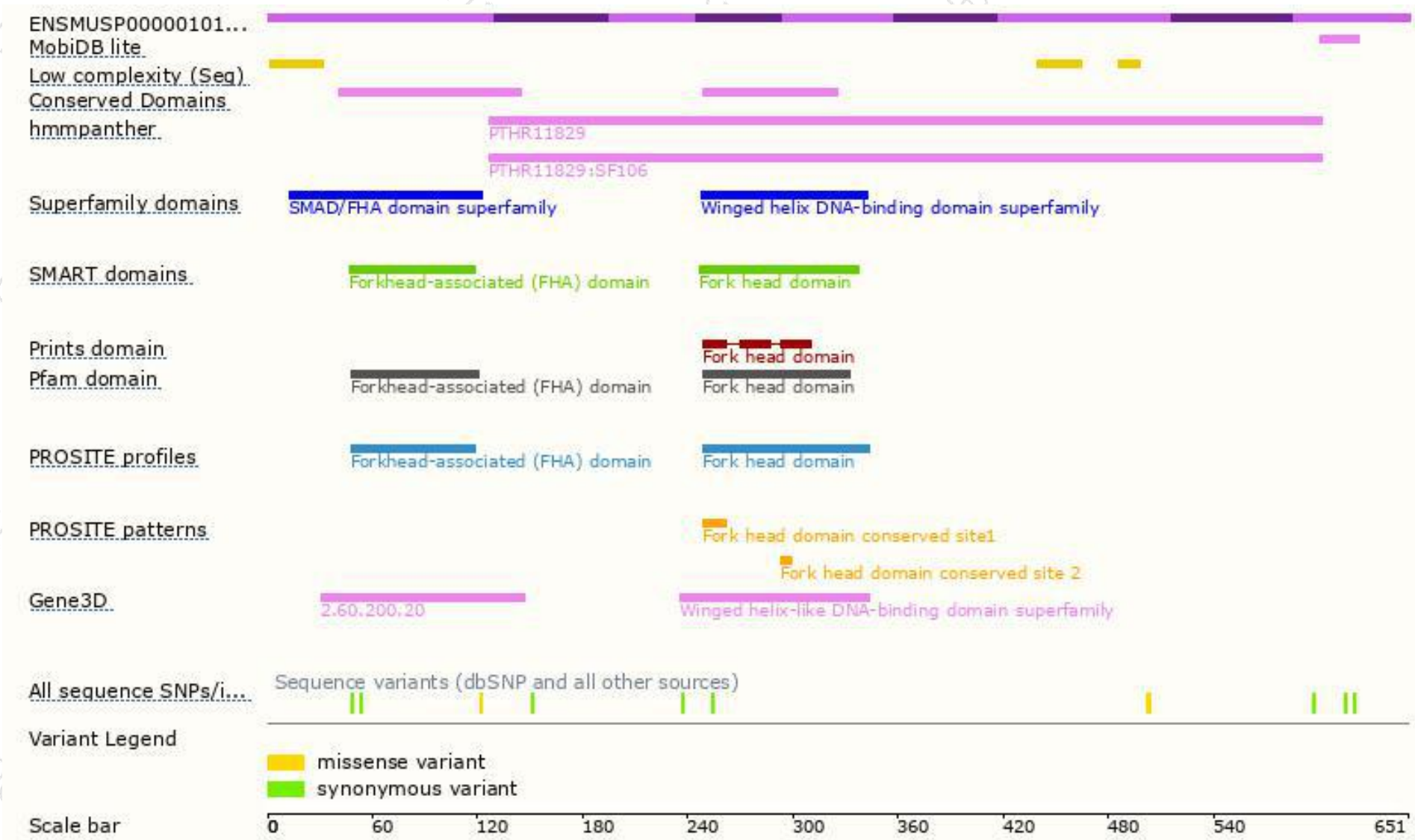
Genomic location distribution



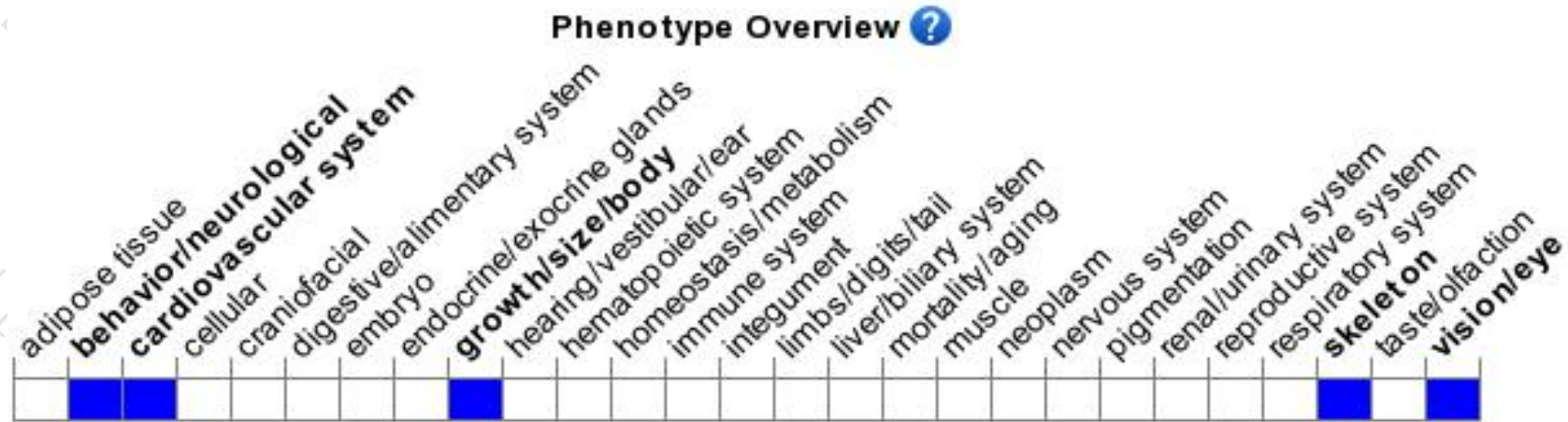
Protein domain



集萃药康
GemPharmatech



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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