

***Fnip1* Cas9-CKO Strategy**

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Project Overview

Project Name

$Fnip1$

Project type

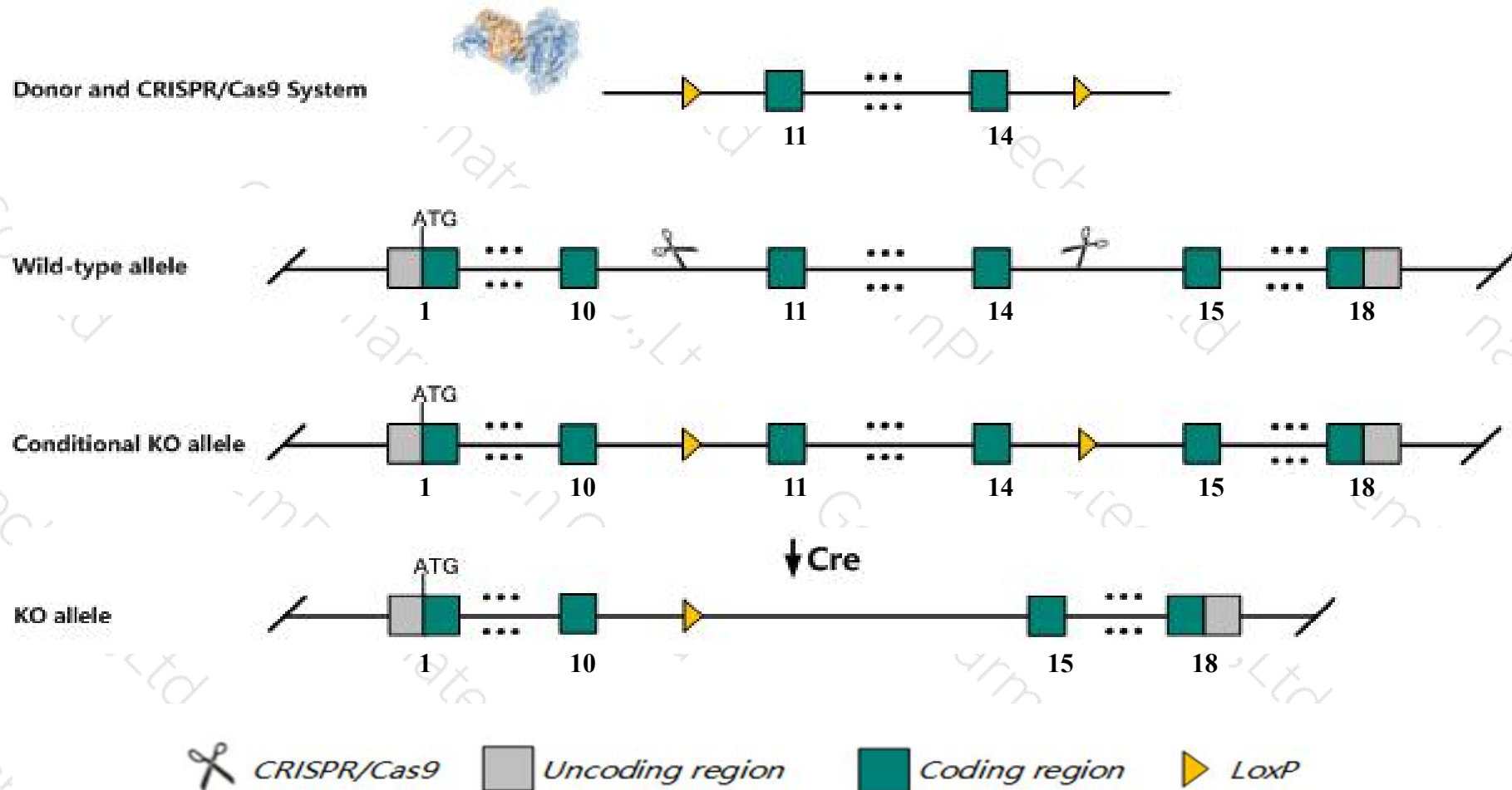
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Fnip1* gene. The schematic diagram is as follows:



Technical routes

- The *Fnip1* gene has 2 transcripts. According to the structure of *Fnip1* gene, exon11-exon14 of *Fnip1*-201 (ENSMUST00000046835.13) transcript is recommended as the knockout region. The region contains 1820bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Fnip1* gene. The brief process is as follows: CRISPR/Cas9 system and Donor 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.
- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

- According to the existing MGI data, Mice homozygous for an ENU-induced or targeted allele exhibit arrested B cell development at the pre-B cell stage with increased B cell apoptosis.
- The *Fnip1* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Fnip1 folliculin interacting protein 1 [Mus musculus (house mouse)]

Gene ID: 216742, updated on 31-Jan-2019

Summary



Official Symbol	Fnip1 provided by MGI
Official Full Name	folliculin interacting protein 1 provided by MGI
Primary source	MGI:MGI:2444668
See related	Ensembl:ENSMUSG00000035992
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	A730024A03Rik, AI838773, AW557298
Expression	Ubiquitous expression in bladder adult (RPKM 4.7), placenta adult (RPKM 4.6) and 28 other tissues See more
Orthologs	human all

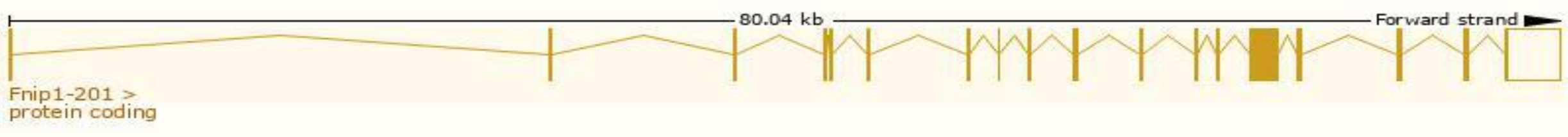
Transcript information

Ensembl

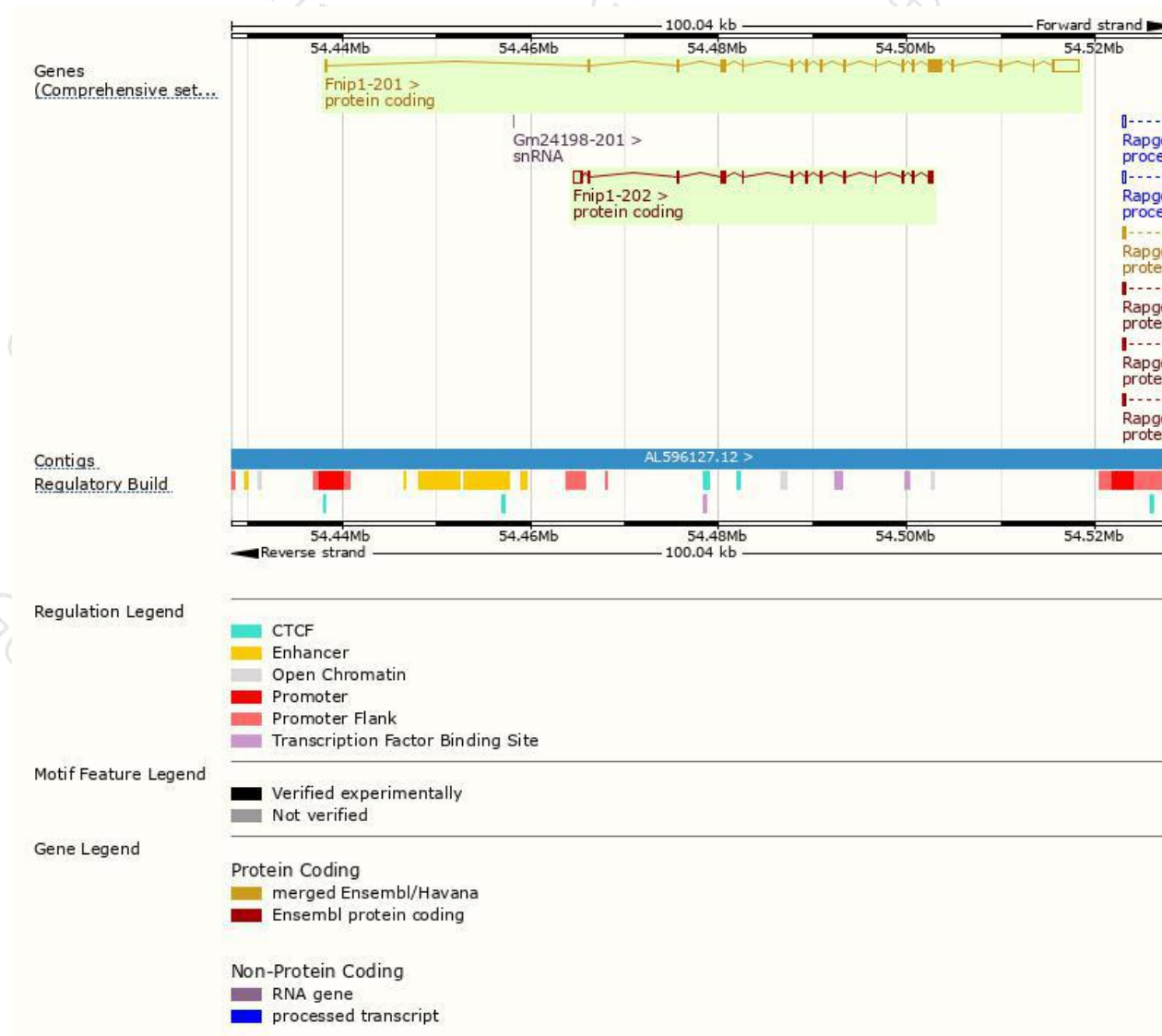
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Fnip1-201	ENSMUST00000046835.13	6255	1165aa	Protein coding	CCDS24698	Q68FD7	TSL:1 GENCODE basic APPRIS P1
Fnip1-202	ENSMUST00000143650.1	2738	631aa	Protein coding	-	F6RJ64	CDS 3' incomplete TSL:1

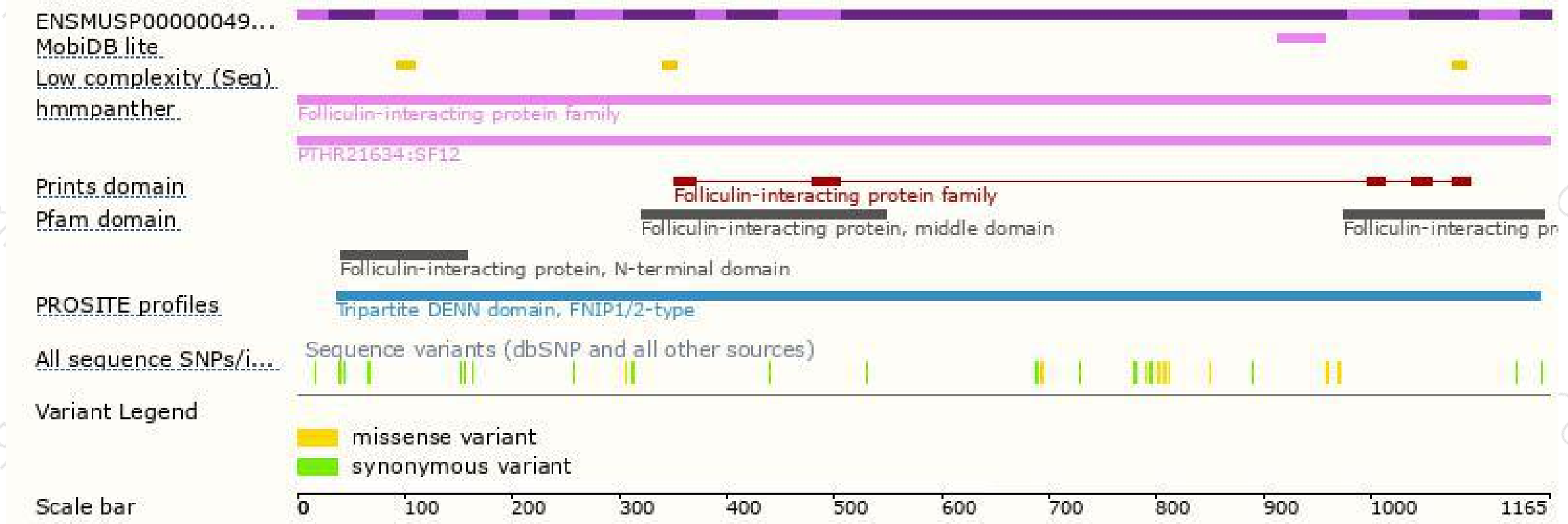
The strategy is based on the design of *Fnip1-201* transcript,The transcription is shown below



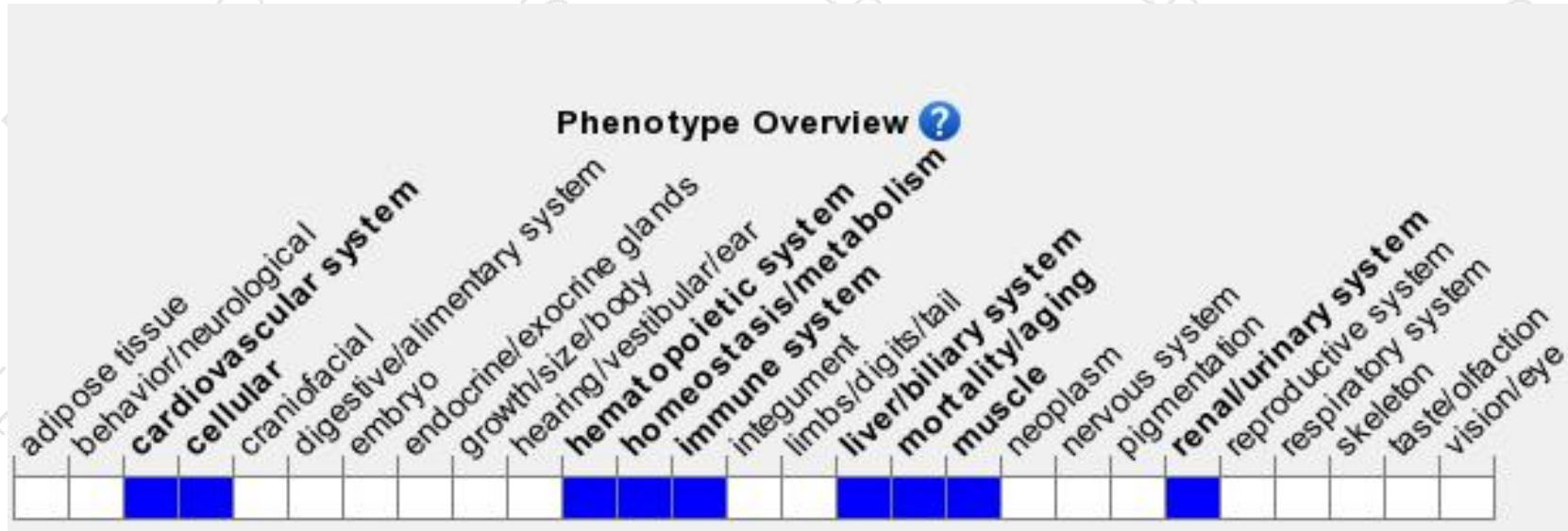
Genomic location distribution



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 an ENU-induced or targeted allele exhibit arrested B cell development at the pre-B cell stage with increased B cell apoptosis.

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

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