

Kpna3 Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Kpna3

Project type

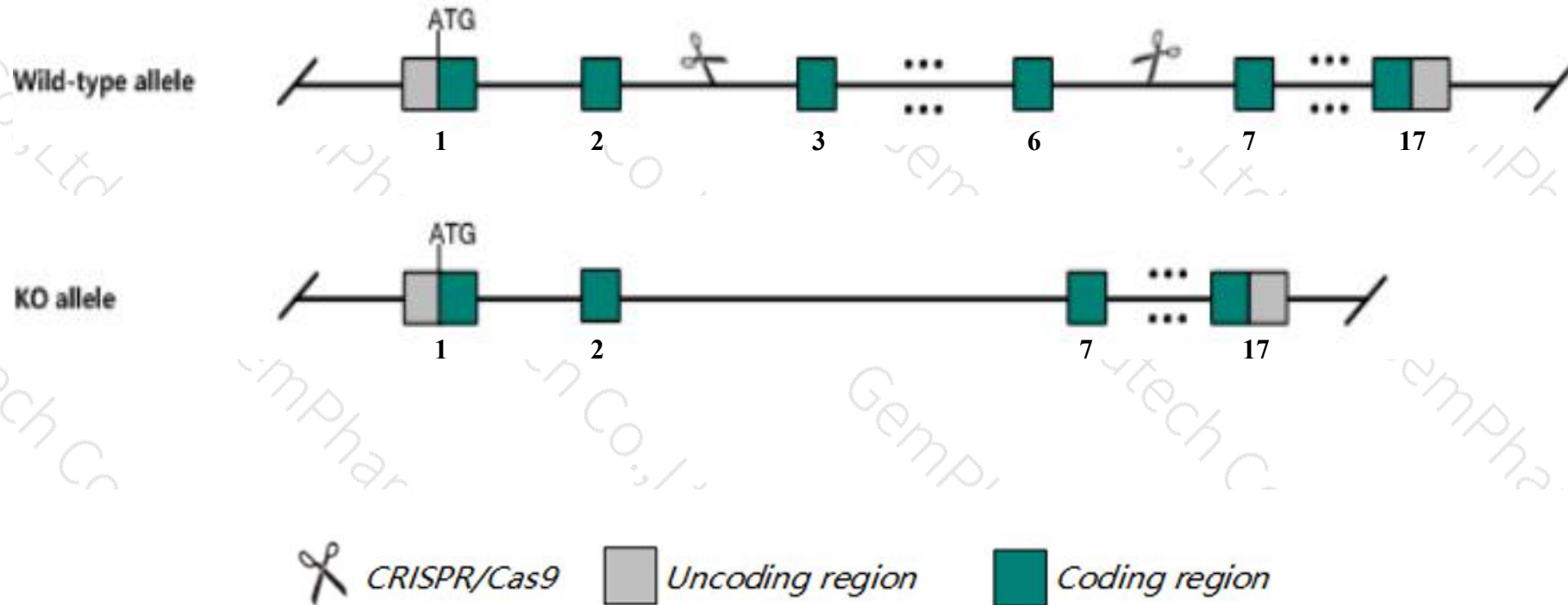
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Kpna3* gene. The schematic diagram is as follows:



- The *Kpna3* gene has 2 transcripts. According to the structure of *Kpna3* gene, exon3-exon6 of *Kpna3-201* (ENSMUST00000022496.8) transcript is recommended as the knockout region. The region contains 269bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Kpna3* gene. The brief process is as follows: CRISPR/Cas9 system

- Mice homozygous for a null mutation are viable and fertile.
- The *Kpna3* gene is located on the Chr14. 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)

Kpna3 karyopherin (importin) alpha 3 [*Mus musculus* (house mouse)]

Gene ID: 16648, updated on 13-Mar-2020

Summary

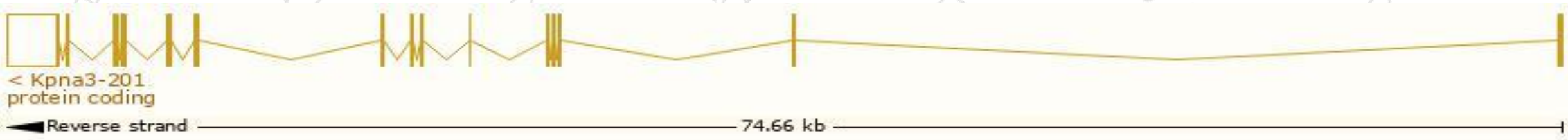
Official Symbol	Kpna3 provided by MGI
Official Full Name	karyopherin (importin) alpha 3 provided by MGI
Primary source	MGI:MGI:1100863
See related	Ensembl:ENSMUSG000000021929
Gene type	protein coding
RefSeq status	VALIDATED
Organism	<i>Mus musculus</i>
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	IPOA4
Expression	Ubiquitous expression in placenta adult (RPKM 19.9), CNS E18 (RPKM 18.5) and 24 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
Kpna3-201	ENSMUST00000022496.8	4069	521aa	Protein coding	CCDS36942	O35344 Q543M7	TSL:1 GENCODE basic APPRIS P1
Kpna3-202	ENSMUST000000225207.1	698	No protein	Retained intron	-	-	-

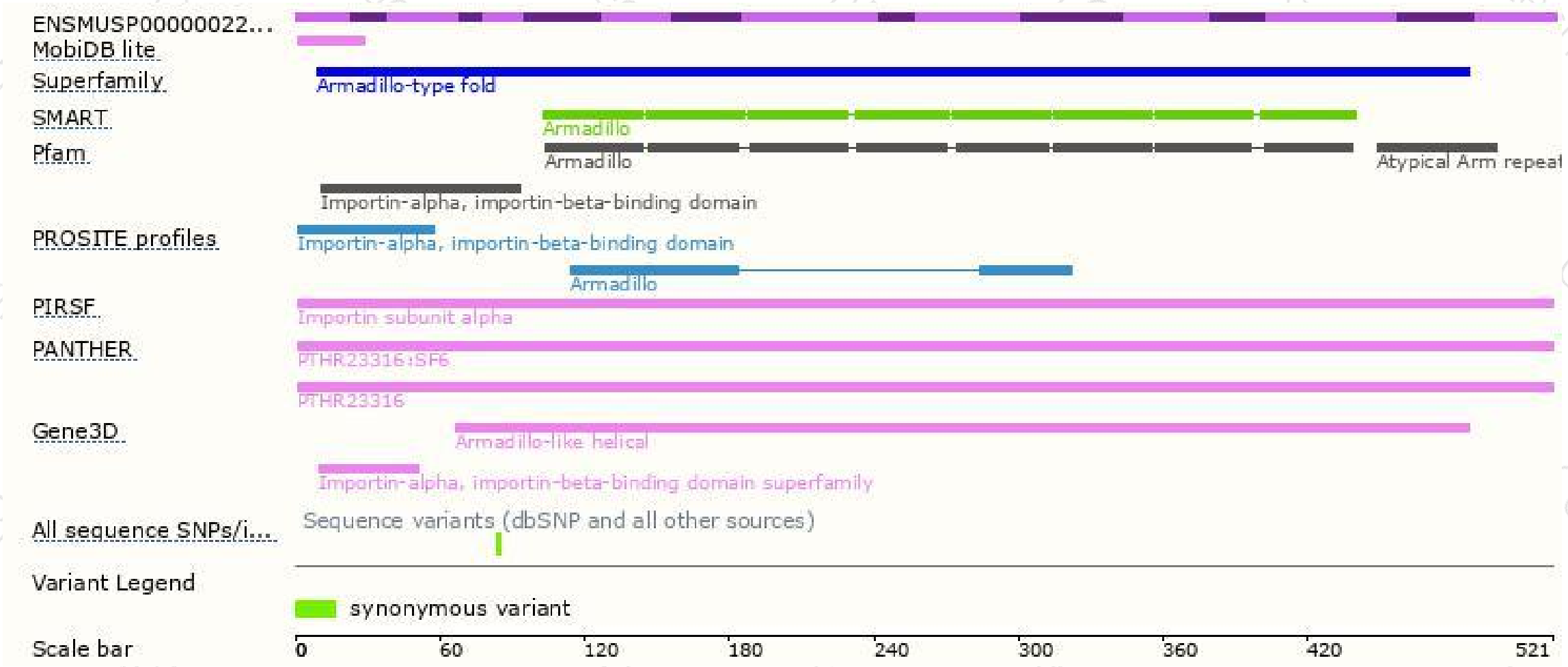
The strategy is based on the design of *Kpna3-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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