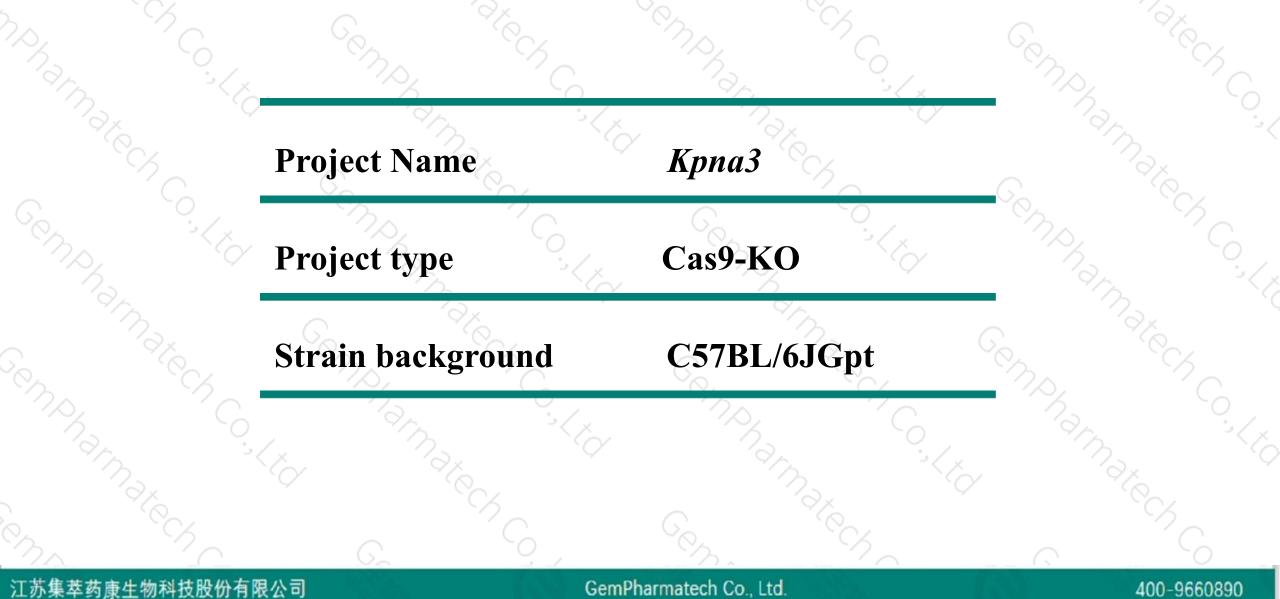


Kpna3 Cas9-KO Strategy

Designer: Reviewer: Design Date: Daohua Xu Huimin Su 2020-3-30

Project Overview

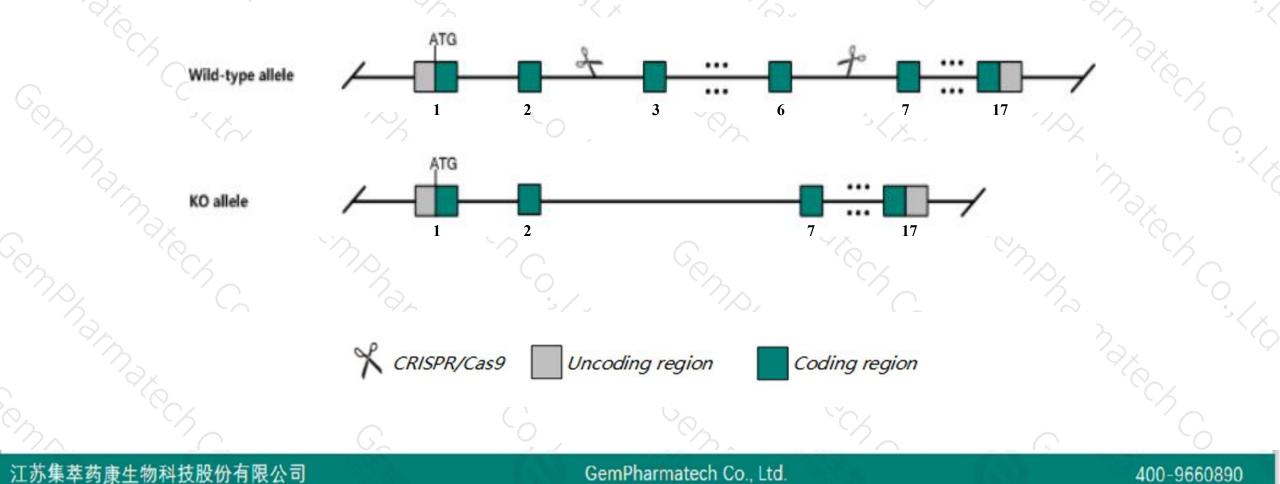




Knockout strategy



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 (ENSMUST0000022496.8) 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.

Notice

Gene information (NCBI)



☆ ?

400-9660890

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

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

Summary

Official SymbolKpna3 provided by MGIOfficial Full Namekaryopherin (importin) alpha 3 provided by MGIPrimary sourceMGI:MGI:1100863See relatedEnsembl:ENSMUSG0000021929Gene typeprotein codingRefSeq statusVALIDATEDOrganismMus musculusLineageEukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha;
Muroidea; Muridae; Murinae; Mus; MusAlso known asIPOA4ExpressionUbiquitous expression in placenta adult (RPKM 19.9), CNS E18 (RPKM 18.5) and 24 other tissues See more
human all

Transcript information (Ensembl)



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

Name 🖕	Transcript ID 🖕	bp 🖕	Protein 🖕	Biotype 💧	CCDS	UniProt 🍦	Flags 🍦		
Kpna3-201	ENSMUST0000022496.8	4069	<u>521aa</u>	Protein coding	CCDS36942	<u>035344</u> @ <u>Q543M7</u> @	TSL:1	GENCODE basic	APPRIS P1
Kpna3-202	ENSMUST00000225207.1	698	No protein	Retained intron	-	-			

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

< Kpna3-201 protein coding

Reverse strand -

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74.66 kb

Genomic location distribution



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Protein domain



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ENSMUSP00000022 MobiDB lite							5
Superfamily	Armadillo-type fok	d					- 6
SMART		Armadillo		4		-	
Pfam.		Armadillo				Atyp	pical Arm repeat
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PROSITE profiles	Importin-alpha, imp	ortin-beta-binding do	omain				
		Armadillo					<u> </u>
PIRSF	Importin subunit alp	ha					
PANTHER	PTHR23316:SF6						
CaralD	PTHR23316						
Gene3D		nadillo-like helical					
		mportin-beta-binding					ò
All sequence SNPs/i	Sequence variants	s (dbSNP and all ot	.her sources)				
Variant Legend	synonymous	usriset					· (
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If you have any questions, you are welcome to inquire. Tel: 400-9660890



