

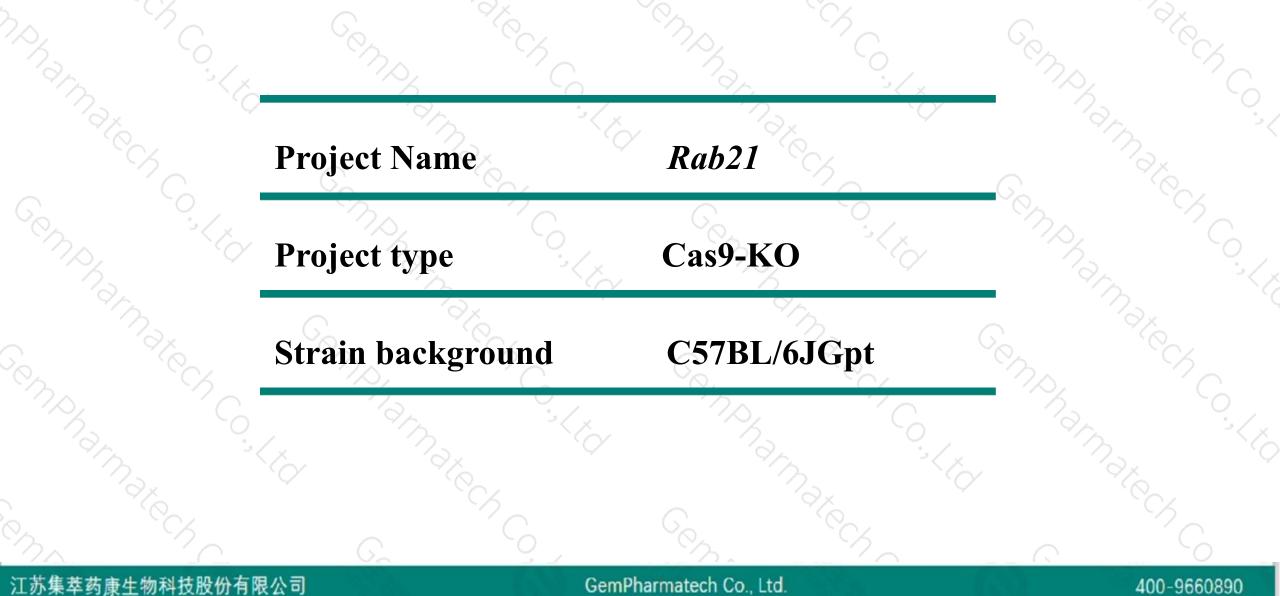
Rab21 Cas9-KO Strategy

Designer: Xueting Zhang Design Date: 2019-7-25

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Project Overview

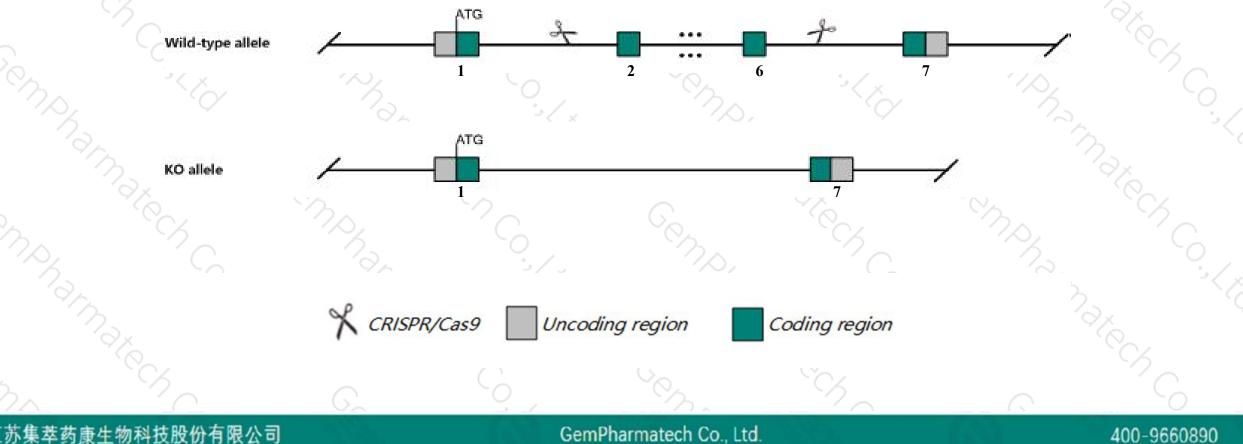




Knockout strategy



This model will use CRISPR/Cas9 technology to edit the Rab21 gene. The schematic diagram is as follows:



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- The Rab21 gene has 2 transcripts. According to the structure of Rab21 gene, exon2-exon6 of Rab21-201 (ENSMUST0000020343.8) transcript is recommended as the knockout region. The region contains 376bp coding sequence. Knock out the region will result in disruption of protein function.
- > In this project we use CRISPR/Cas9 technology to modify Rab21 gene. The brief process is as follows: CRISPR/Cas9 system

- The Rab21 gene is located on the Chr10. 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.
- Transcript Rab21-202 may not be affected.
- 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)



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Rab21 RAB21, member RAS oncogene family [Mus musculus (house mouse)]

Gene ID: 216344, updated on 31-Jan-2019

Summary

Official Symbol	Rab21 provided by MGI
Official Full Name	RAB21, member RAS oncogene family provided by MGI
Primary source	MGI:MGI:894308
See related	Ensembl:ENSMUSG0000020132
Gene type	protein coding
RefSeq status	PROVISIONAL
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha;
	Muroidea; Muridae; Murinae; Mus; Mus
Also known as	9630024B22
Expression	Ubiquitous expression in heart adult (RPKM 17.5), bladder adult (RPKM 15.7) and 28 other tissues See more
Orthologs	human all

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Transcript information (Ensembl)



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

Name	Transcript ID	Transcript ID bp Protei		Biotype	CCDS	UniProt	Flags		
Rab21-201	ENSMUST00000020343.8	4602	<u>222aa</u>	Protein coding	CCDS24177	P35282 Q0PD35	TSL:1 GENCODE basic APPRIS P1		
Rab21-202	ENSMUST00000218831.1	843	<u>94aa</u>	Protein coding	-	A0A1W2P6Z4	TSL:NA GENCODE basic		

The strategy is based on the design of Rab21-201 transcript, The transcription is shown below

< Rab21-201 protein coding

Reverse strand

- 28.51 kb -

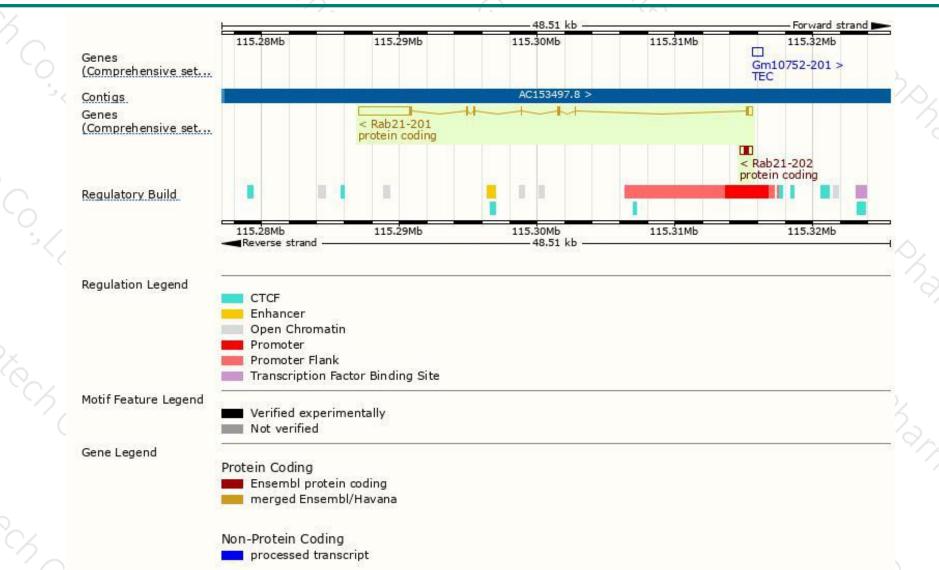
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Genomic location distribution





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Protein domain



ENSMUSP00000020... Low complexity (Seg) Conserved Domains hmmpanther

TIGRFAM domain

Superfamily domains SMART domains

Prints domain Pfam domain PROSITE profiles Gene3D

All sequence SNPs/i...

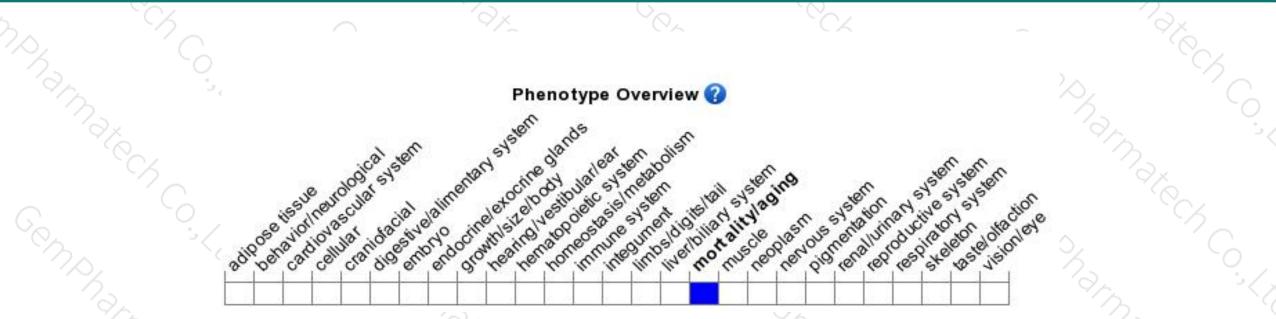
Variant Legend

Scale bar

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	Small GTPase super	family								42	
	PR00449										
	SM00173	1000	-10		<i></i>	- 372					~
	SM00175							-			`О́
	SM00176									-8	
	SM00174										
	P-loop containing nuc			rolase				-			
	Small GTP-binding pro	otein domai	n								
	PTHR24073										0
	PTHR24073:SF509										
- 19	- R.									-	

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. Tel: 400-9660890



