

# ***Rab11fip3* Cas9-CKO Strategy**

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**Reviewer:**

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# Project Overview

**Project Name**

***Rab11fip3***

**Project type**

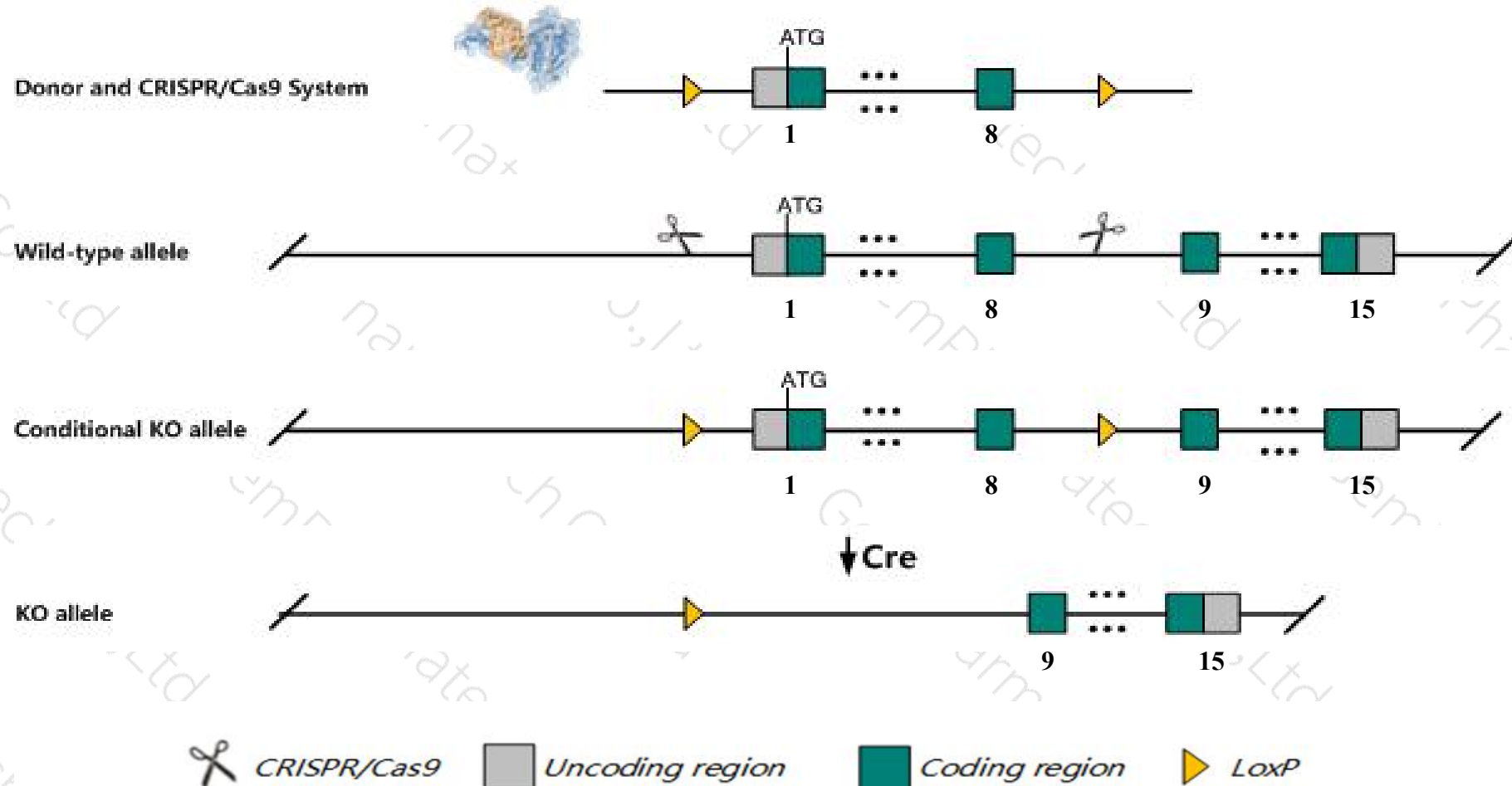
**Cas9-CKO**

**Strain background**

**C57BL/6JGpt**

# Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Rab11fip3* gene. The schematic diagram is as follows:



- The *Rab11fip3* gene has 6 transcripts. According to the structure of *Rab11fip3* gene, exon1-exon8 of *Rab11fip3-203* (ENSMUST00000122103.8) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Rab11fip3* 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.

# Notice

- The KO region contains functional region of the *Gm17814* gene. Knockout the region may affect the function of *Gm17814* gene.
- The *Rab11fip3* gene is located on the Chr17. 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.



# Gene information (NCBI)

## Rab11fip3 RAB11 family interacting protein 3 (class II) [ *Mus musculus* (house mouse) ]

Gene ID: 215445, updated on 13-Mar-2020

### Summary

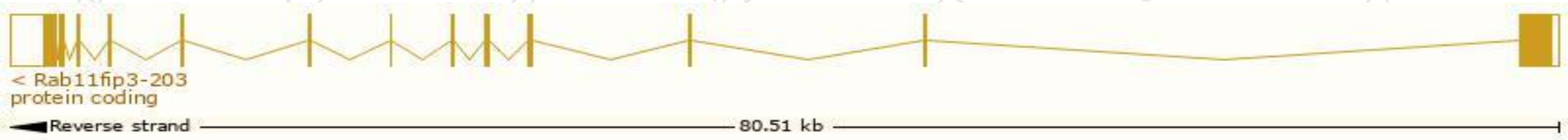
Official Symbol	Rab11fip3 provided by <a href="#">MGI</a>
Official Full Name	RAB11 family interacting protein 3 (class II) provided by <a href="#">MGI</a>
Primary source	<a href="#">MGI:MGI:2444431</a>
See related	<a href="#">Ensembl:ENSMUSG000000037098</a>
Gene type	protein coding
RefSeq status	VALIDATED
Organism	<a href="#">Mus musculus</a>
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Cart1; mKIAA0665; Rab11-FIP3; D030060O14Rik
Expression	Broad expression in kidney adult (RPKM 86.1), frontal lobe adult (RPKM 15.3) and 23 other tissues <a href="#">See more</a>
Orthologs	<a href="#">human</a> <a href="#">all</a>

# Transcript information (Ensembl)

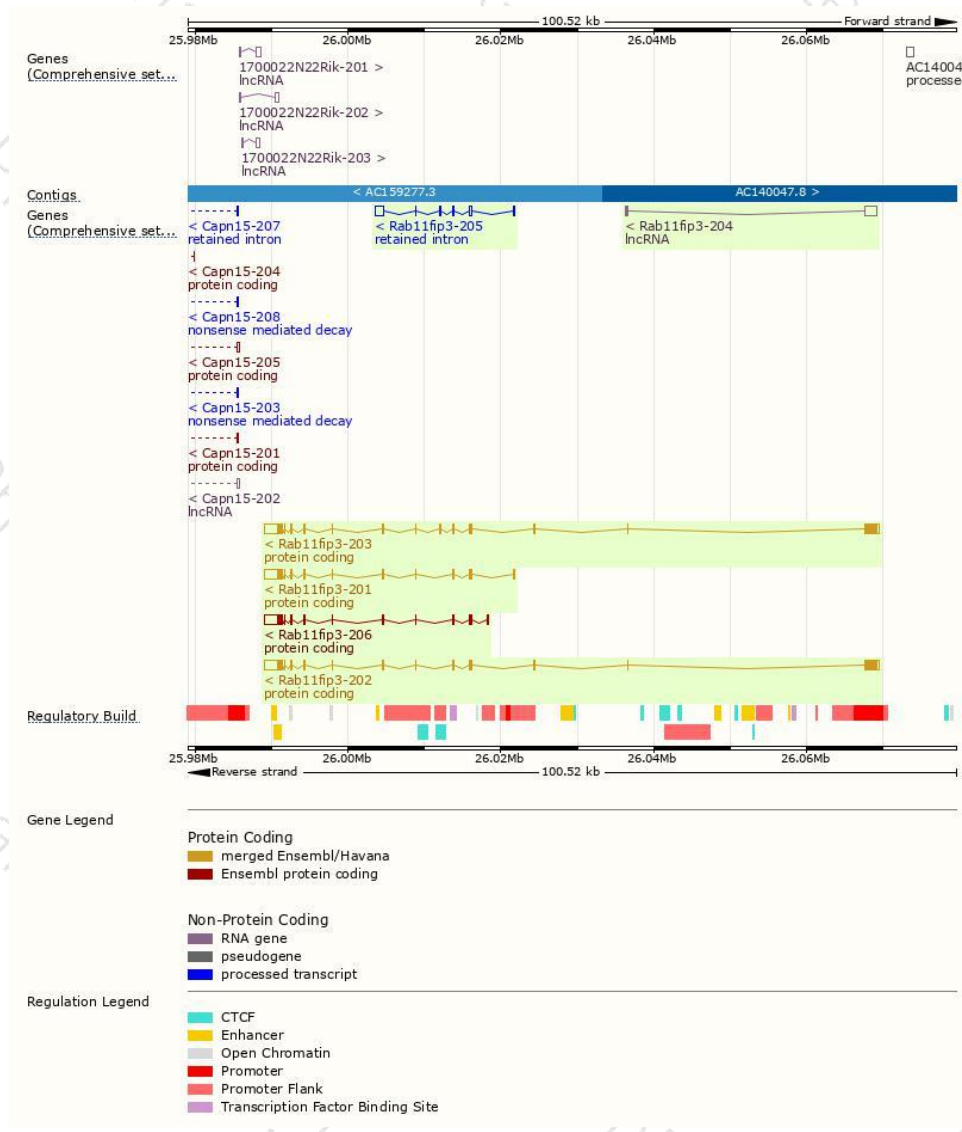
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Rab11fip3-203	<a href="#">ENSMUST00000122103.8</a>	5383	<a href="#">1092aa</a>	Protein coding	<a href="#">CCDS50041</a>	<a href="#">Q8CHD8</a>	TSL:1 Gencode basic APPRIS P4
Rab11fip3-202	<a href="#">ENSMUST00000120691.8</a>	5249	<a href="#">1047aa</a>	Protein coding	<a href="#">CCDS50040</a>	<a href="#">Q8CHD8</a>	TSL:1 Gencode basic APPRIS ALT2
Rab11fip3-206	<a href="#">ENSMUST00000148021.2</a>	3333	<a href="#">444aa</a>	Protein coding	<a href="#">CCDS50039</a>	<a href="#">D3Z1T5</a> <a href="#">Q8CHD8</a>	TSL:3 Gencode basic
Rab11fip3-201	<a href="#">ENSMUST00000118828.7</a>	3271	<a href="#">444aa</a>	Protein coding	<a href="#">CCDS50039</a>	<a href="#">Q8CHD8</a>	TSL:1 Gencode basic
Rab11fip3-204	<a href="#">ENSMUST00000126306.1</a>	1976	No protein	Processed transcript	-	-	TSL:3
Rab11fip3-205	<a href="#">ENSMUST00000144587.1</a>	1652	No protein	Retained intron	-	-	TSL:1

The strategy is based on the design of *Rab11fip3-203* transcript,The transcription is shown below



# Genomic location distribution

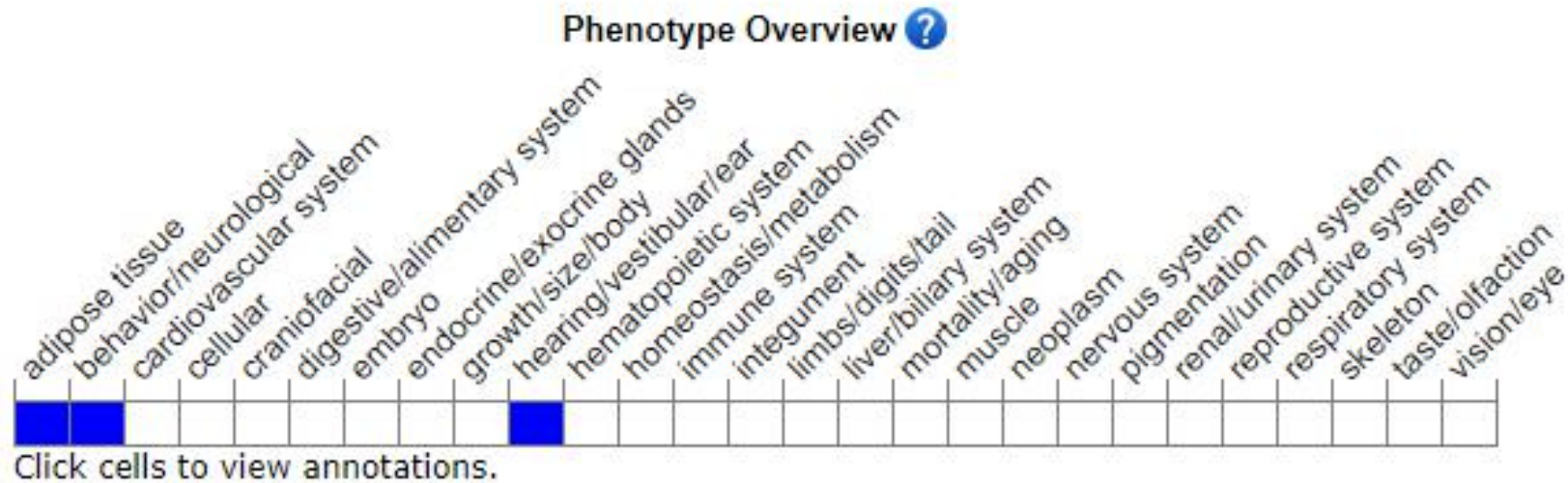




# Protein domain



# Mouse phenotype description(MGI)



*Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).*

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

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