

# ***Comm4 Cas9-KO Strategy***

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# Project Overview

**Project Name**

***Commd4***

**Project type**

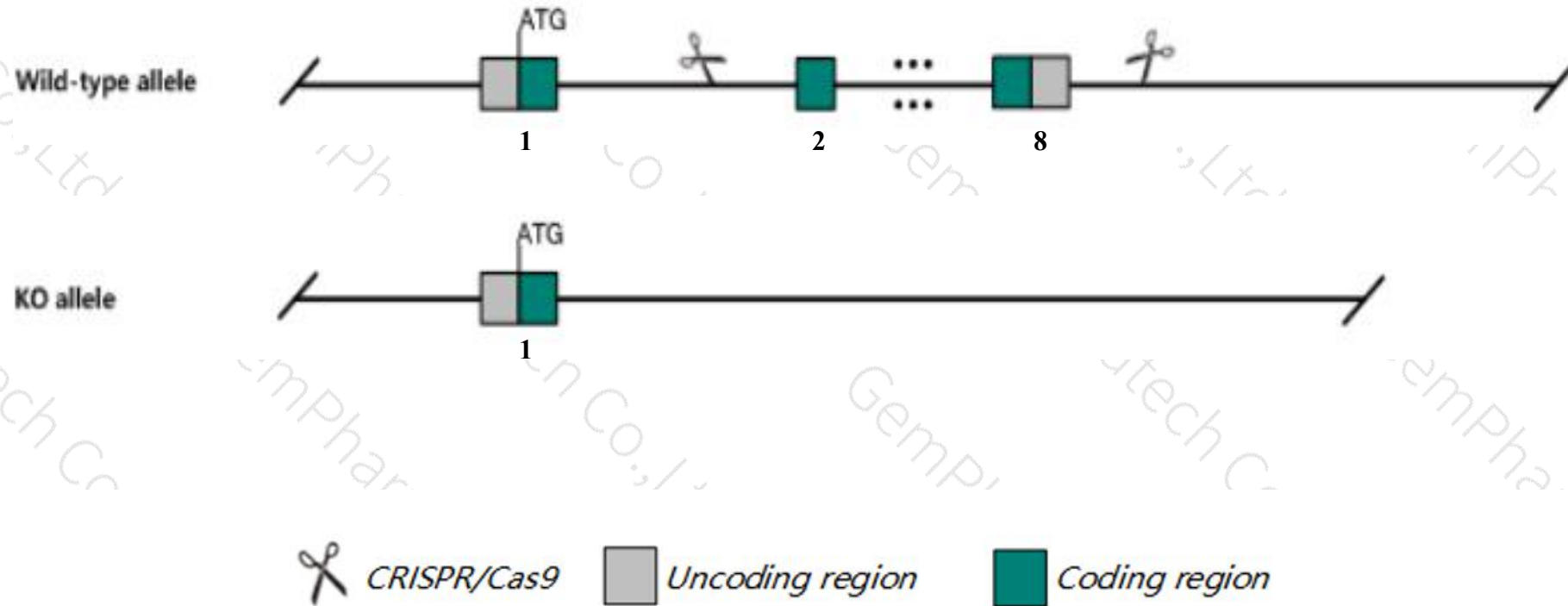
**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Commd4* gene. The schematic diagram is as follows:



- The *Commd4* gene has 13 transcripts. According to the structure of *Commd4* gene, exon2-exon8 of *Commd4-201*(ENSMUST00000065358.8) transcript is recommended as the knockout region. The region contains most of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Commd4* gene. The brief process is as follows: CRISPR/Cas9 system 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 *Commd4* gene is located on the Chr9. 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.



## Commd4 COMM domain containing 4 [Mus musculus (house mouse)]

Gene ID: 66199, updated on 13-Mar-2020

### Summary



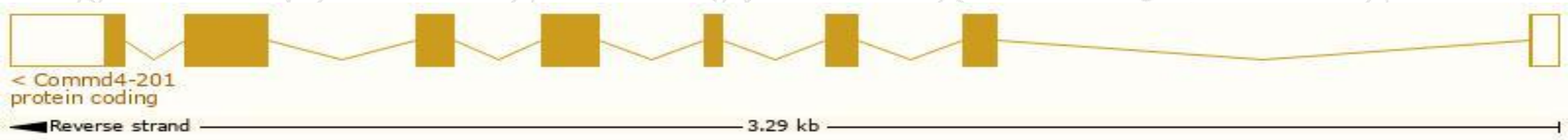
<b>Official Symbol</b>	Commd4 provided by <a href="#">MGI</a>
<b>Official Full Name</b>	COMM domain containing 4 provided by <a href="#">MGI</a>
<b>Primary source</b>	<a href="#">MGI:MGI:1913449</a>
<b>See related</b>	<a href="#">Ensembl:ENSMUSG00000032299</a>
<b>Gene type</b>	protein coding
<b>RefSeq status</b>	PROVISIONAL
<b>Organism</b>	<a href="#">Mus musculus</a>
<b>Lineage</b>	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
<b>Also known as</b>	1110039H05Rik
<b>Expression</b>	Ubiquitous expression in thymus adult (RPKM 54.1), placenta adult (RPKM 51.9) and 28 other tissues <a href="#">See more</a>
<b>Orthologs</b>	<a href="#">human</a> <a href="#">all</a>

# Transcript information Ensembl

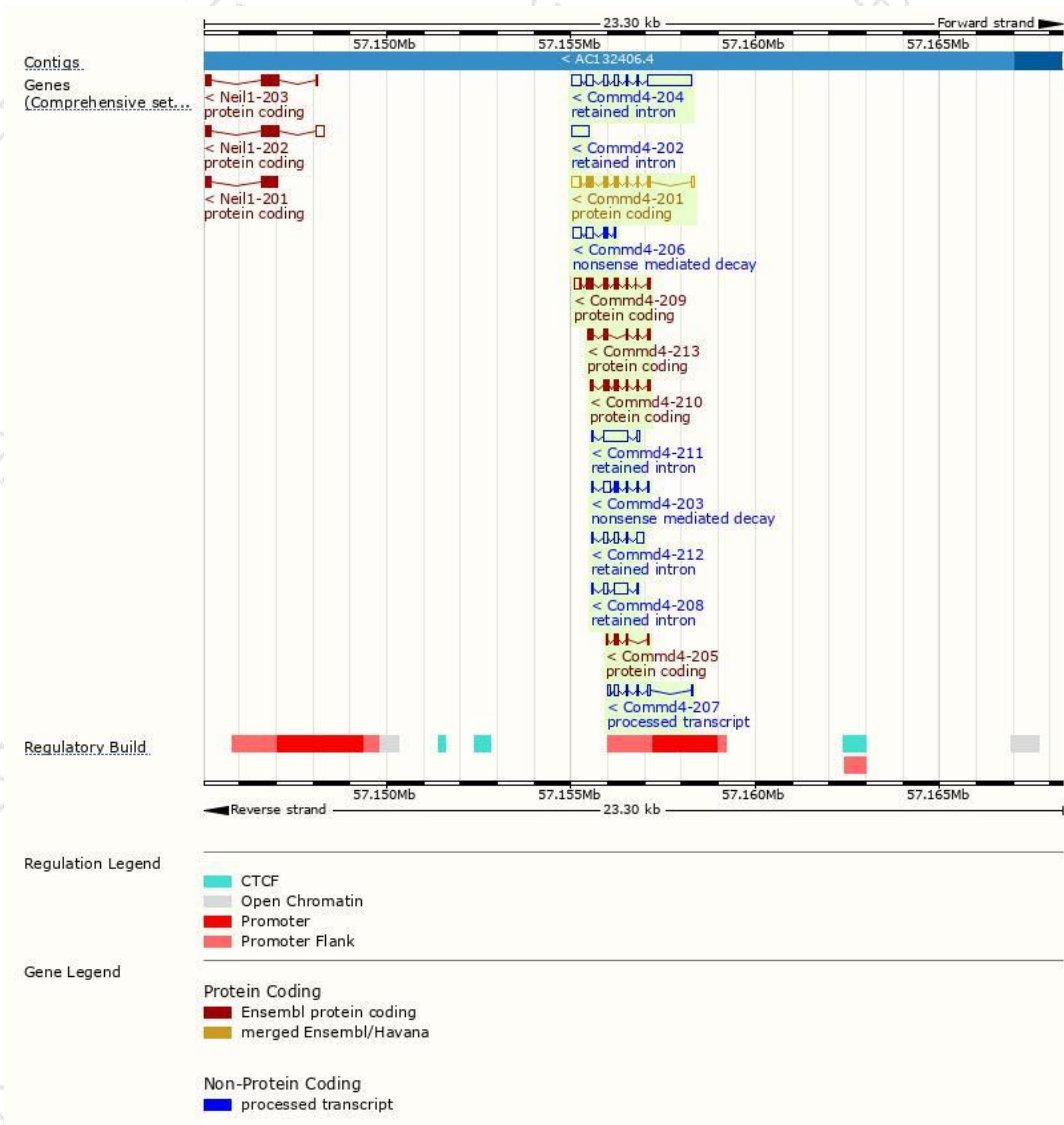
The gene has 13 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Commd4-201	<a href="#">ENSMUST00000065358.8</a>	858	<a href="#">199aa</a>	Protein coding	<a href="#">CCDS40647</a>	<a href="#">Q9CQ02</a>	TSL:1 GENCODE basic APPRIS P1
Commd4-209	<a href="#">ENSMUST00000214640.1</a>	703	<a href="#">180aa</a>	Protein coding	-	<a href="#">A0A1L1SVC7</a>	CDS 5' incomplete TSL:3
Commd4-210	<a href="#">ENSMUST00000215013.1</a>	492	<a href="#">164aa</a>	Protein coding	-	<a href="#">A0A1L1SRX4</a>	CDS 5' and 3' incomplete TSL:3
Commd4-213	<a href="#">ENSMUST00000217018.1</a>	388	<a href="#">129aa</a>	Protein coding	-	<a href="#">A0A1L1SRJ9</a>	CDS 5' and 3' incomplete TSL:3
Commd4-205	<a href="#">ENSMUST00000214097.1</a>	246	<a href="#">82aa</a>	Protein coding	-	<a href="#">A0A1L1SRM6</a>	CDS 5' and 3' incomplete TSL:3
Commd4-206	<a href="#">ENSMUST00000214174.1</a>	579	<a href="#">54aa</a>	Nonsense mediated decay	-	<a href="#">A0A1L1STT5</a>	CDS 5' incomplete TSL:2
Commd4-203	<a href="#">ENSMUST00000213580.1</a>	472	<a href="#">96aa</a>	Nonsense mediated decay	-	<a href="#">A0A1L1ST08</a>	CDS 5' incomplete TSL:3
Commd4-207	<a href="#">ENSMUST00000214212.1</a>	414	No protein	Processed transcript	-	-	TSL:3
Commd4-204	<a href="#">ENSMUST00000214072.1</a>	1941	No protein	Retained intron	-	-	TSL:1
Commd4-211	<a href="#">ENSMUST00000215500.1</a>	770	No protein	Retained intron	-	-	TSL:3
Commd4-208	<a href="#">ENSMUST00000214325.1</a>	527	No protein	Retained intron	-	-	TSL:3
Commd4-212	<a href="#">ENSMUST00000216031.1</a>	458	No protein	Retained intron	-	-	TSL:3
Commd4-202	<a href="#">ENSMUST00000213161.1</a>	437	No protein	Retained intron	-	-	TSL:NA

The strategy is based on the design of *Commd4-201* transcript,the transcription is shown below:

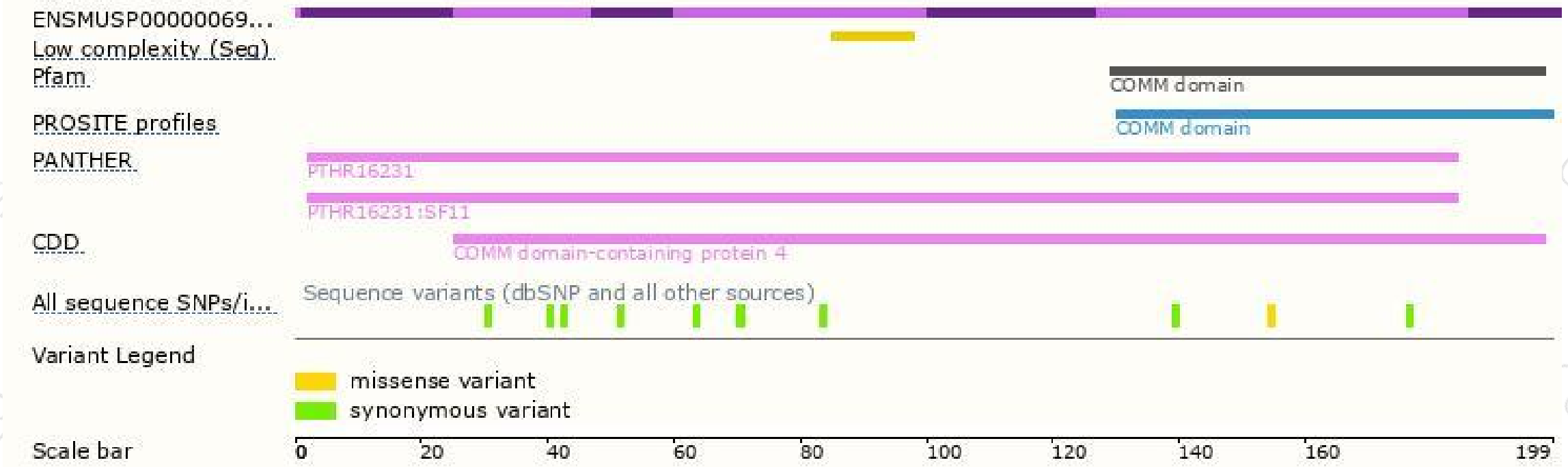


# Genomic location distribution





# Protein domain



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

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