

# *Ahnak* Cas9-KO Strategy

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**Reviewer:**

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**Design Date:**

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# Project Overview

**Project Name**

*Ahnak*

**Project type**

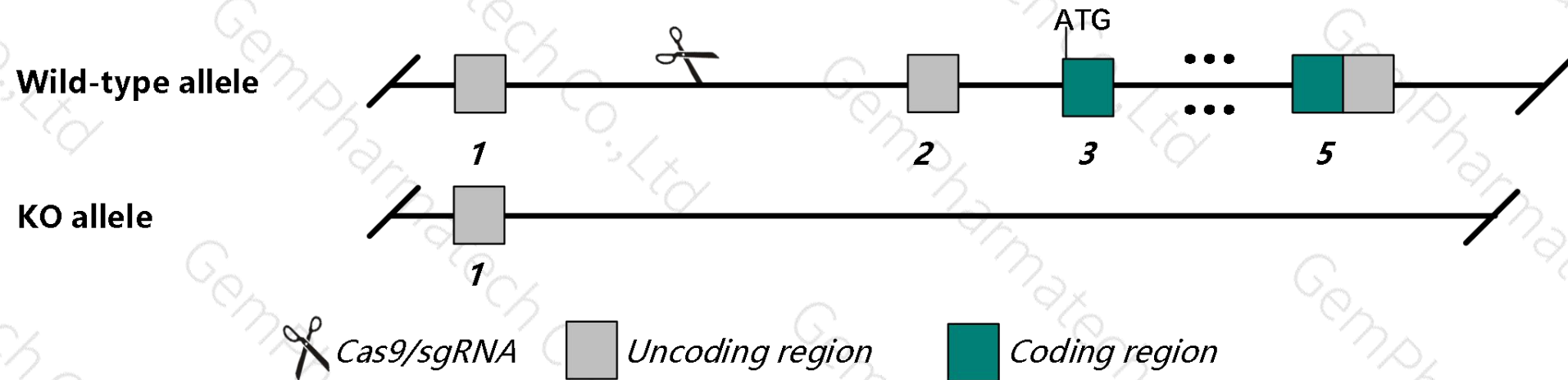
**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

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



- The *Ahnak* gene has 5 transcripts. According to the structure of *Ahnak* gene, exon2-exon5 of *Ahnak-202* (ENSMUST00000092956.3) transcript is recommended as the knockout region. The region contains all 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 *Ahnak* gene. The brief process is as follows: CRISPR/Cas9 system

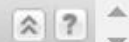
- According to the existing MGI data, Mice homozygous for one knock-out allele exhibit decreased T cell proliferation and increased susceptibility to parasitic infection.
- The *Ahnak* gene is located on the Chr19. If the knockout mice are crossed with other mice strains to obtain double gene positive 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)

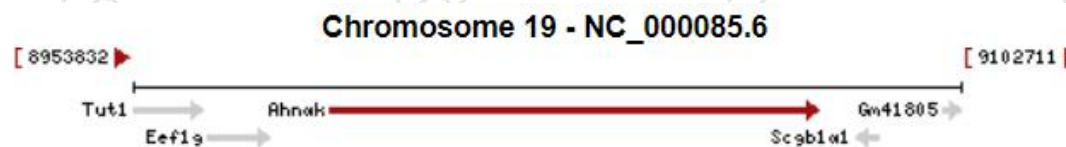
## Ahnak AHNAK nucleoprotein (desmoyokin) [ *Mus musculus* (house mouse) ]

Gene ID: 66395, updated on 18-Nov-2019

### Summary



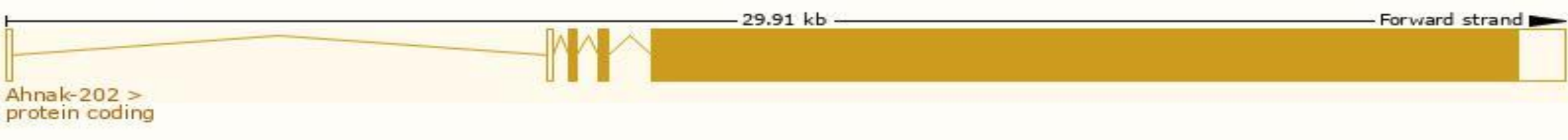
<b>Official Symbol</b>	Ahnak provided by <a href="#">MGI</a>
<b>Official Full Name</b>	AHNAK nucleoprotein (desmoyokin) provided by <a href="#">MGI</a>
<b>Primary source</b>	<a href="#">MGI:MGI:1316648</a>
<b>See related</b>	<a href="#">Ensembl:ENSMUSG00000069833</a>
<b>Gene type</b>	protein coding
<b>RefSeq status</b>	VALIDATED
<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>	DY6
<b>Expression</b>	Biased expression in bladder adult (RPKM 56.2), lung adult (RPKM 31.1) and 13 other tissues <a href="#">See more</a>
<b>Orthologs</b>	<a href="#">human</a> <a href="#">all</a>



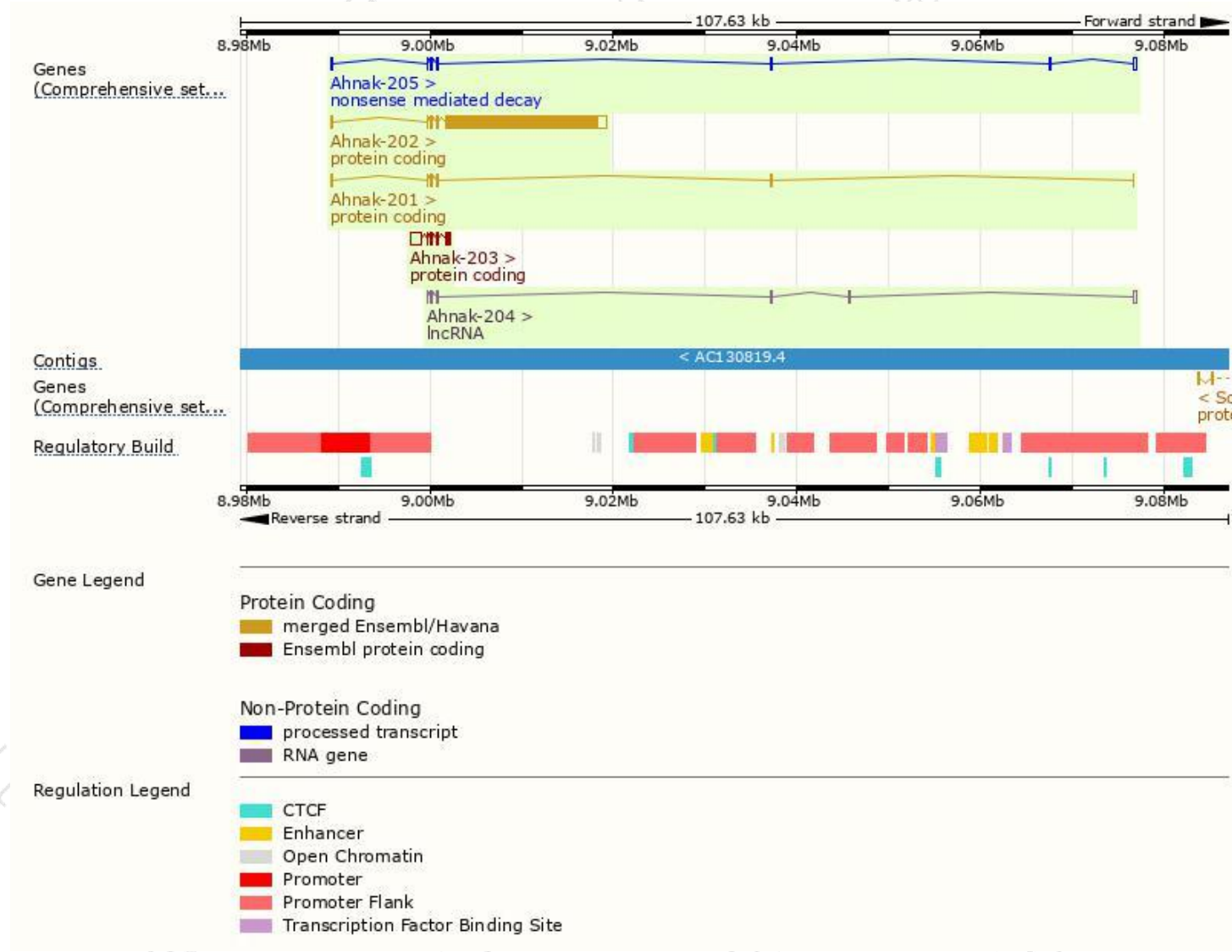
# Transcript information (Ensembl)

Name	Transcript ID	bp	Protein	Translation ID	Biotype	CCDS	UniProt	Flags
Ahnak-202	<a href="#">ENSMUST00000092956.3</a>	18100	<a href="#">5656aa</a>	<a href="#">ENSMUSP00000090633.2</a>	Protein coding	<a href="#">CCDS29564</a>	<a href="#">E9Q616</a>	TSL:1 GENCODE basic
Ahnak-201	<a href="#">ENSMUST00000092955.10</a>	830	<a href="#">150aa</a>	<a href="#">ENSMUSP00000090632.3</a>	Protein coding	<a href="#">CCDS50384</a>	<a href="#">G5E8K8</a>	TSL:2 GENCODE basic APPRIS P1
Ahnak-203	<a href="#">ENSMUST00000236390.1</a>	2200	<a href="#">311aa</a>	<a href="#">ENSMUSP00000158470.1</a>	Protein coding	-	<a href="#">A0A494BBD5</a>	CDS 3' incomplete
Ahnak-205	<a href="#">ENSMUST00000237912.1</a>	1188	<a href="#">176aa</a>	<a href="#">ENSMUSP00000157404.1</a>	Nonsense mediated decay	-	<a href="#">A0A494B8Y7</a>	-
Ahnak-204	<a href="#">ENSMUST00000237033.1</a>	989	No protein	-	lncRNA	-	-	-

The strategy is based on the design of *Ahnak-202* transcript, The transcription is shown below

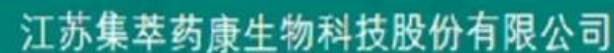


# Genomic location distribution



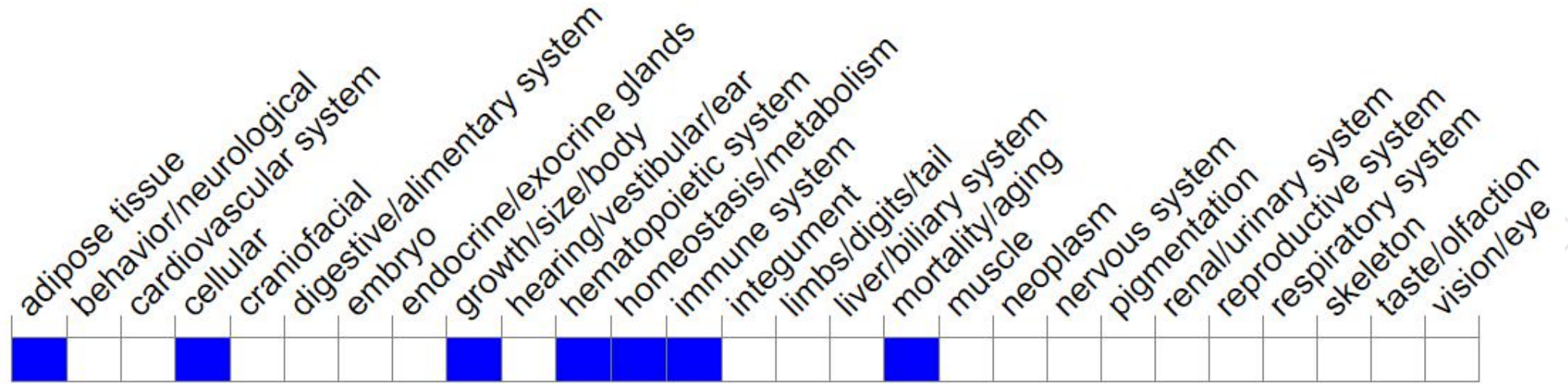


集萃药康  
GemPharmatech



# Mouse phenotype description(MGI)

## Phenotype Overview ?



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

According to the existing MGI data, Mice homozygous for one knock-out allele exhibit decreased T cell proliferation and increased susceptibility to parasitic infection.

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

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