

# *Hint3* Cas9-KO Strategy

Designer: Xiaojing Li

# Project Overview

---

**Project Name**

*Hint3*

---

**Project type**

**Cas9-KO**

---

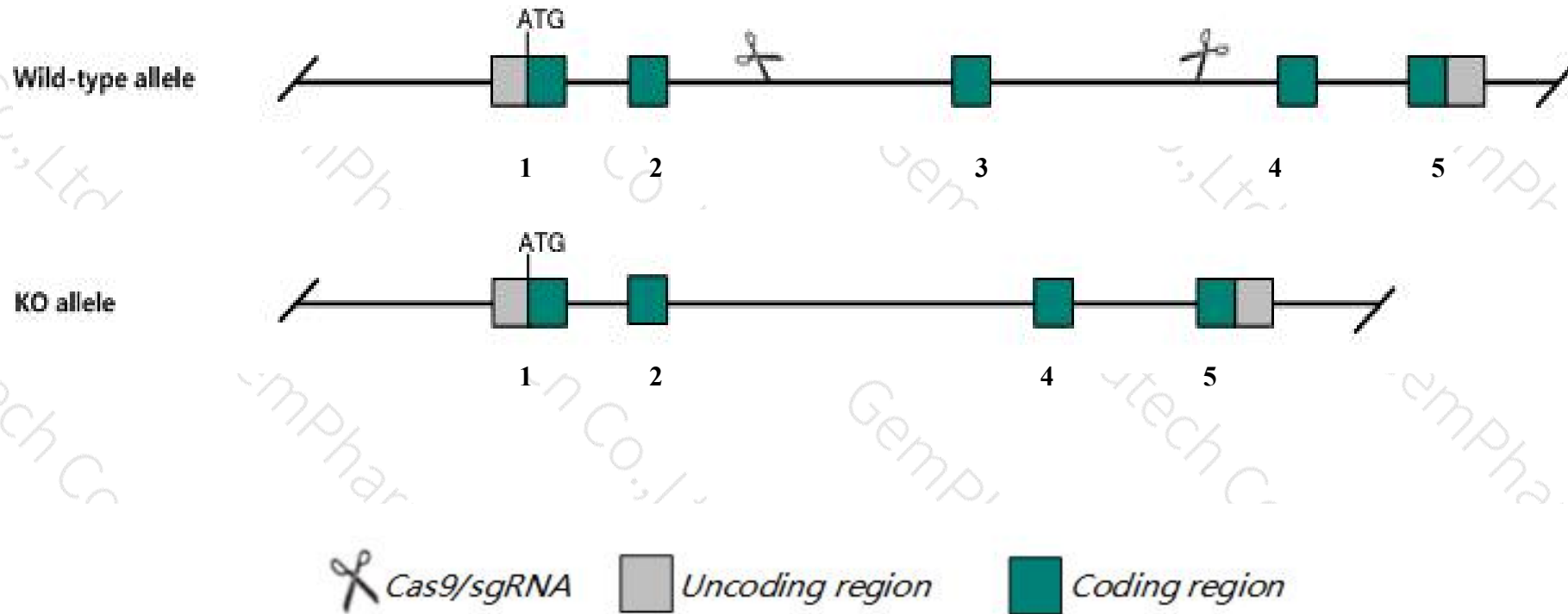
**Strain background**

**C57BL/6J**

---

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Hint3* gene. The schematic diagram is as follows:



- The *Hint3* gene has 6 transcripts. According to the structure of *Hint3* gene, exon3 of *Hint3-203* (ENSMUST00000161074.7) transcript is recommended as the knockout region. The region contains 70bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Hint3* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6J 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/6J mice.

- The *Hint3* 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.
- This Strategy is designed based on genetic information in existing databases. Due to the complexity of gene transcription and translation processes, all risks cannot be predicted under existing information.



# Gene information (NCBI)

## Hint3 histidine triad nucleotide binding protein 3 [Mus musculus (house mouse)]

Gene ID: 66847, updated on 19-Mar-2019

### Summary



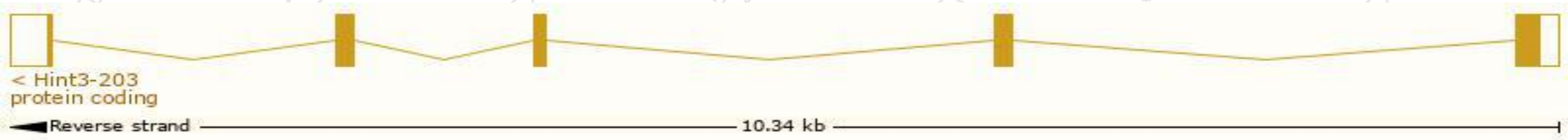
<b>Official Symbol</b>	Hint3 provided by <a href="#">MGI</a>
<b>Official Full Name</b>	histidine triad nucleotide binding protein 3 provided by <a href="#">MGI</a>
<b>Primary source</b>	<a href="#">MGI:MGI:1914097</a>
<b>See related</b>	<a href="#">Ensembl:ENSMUSG00000019791</a>
<b>Gene type</b>	protein 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>	0610010I17Rik, AV009015, HINT-3, HINT-4, HINT4
<b>Expression</b>	Ubiquitous expression in bladder adult (RPKM 4.5), heart adult (RPKM 4.3) and 28 other tissues <a href="#">See more</a>
<b>Orthologs</b>	<a href="#">human</a> <a href="#">all</a>

# Transcript information (Ensembl)

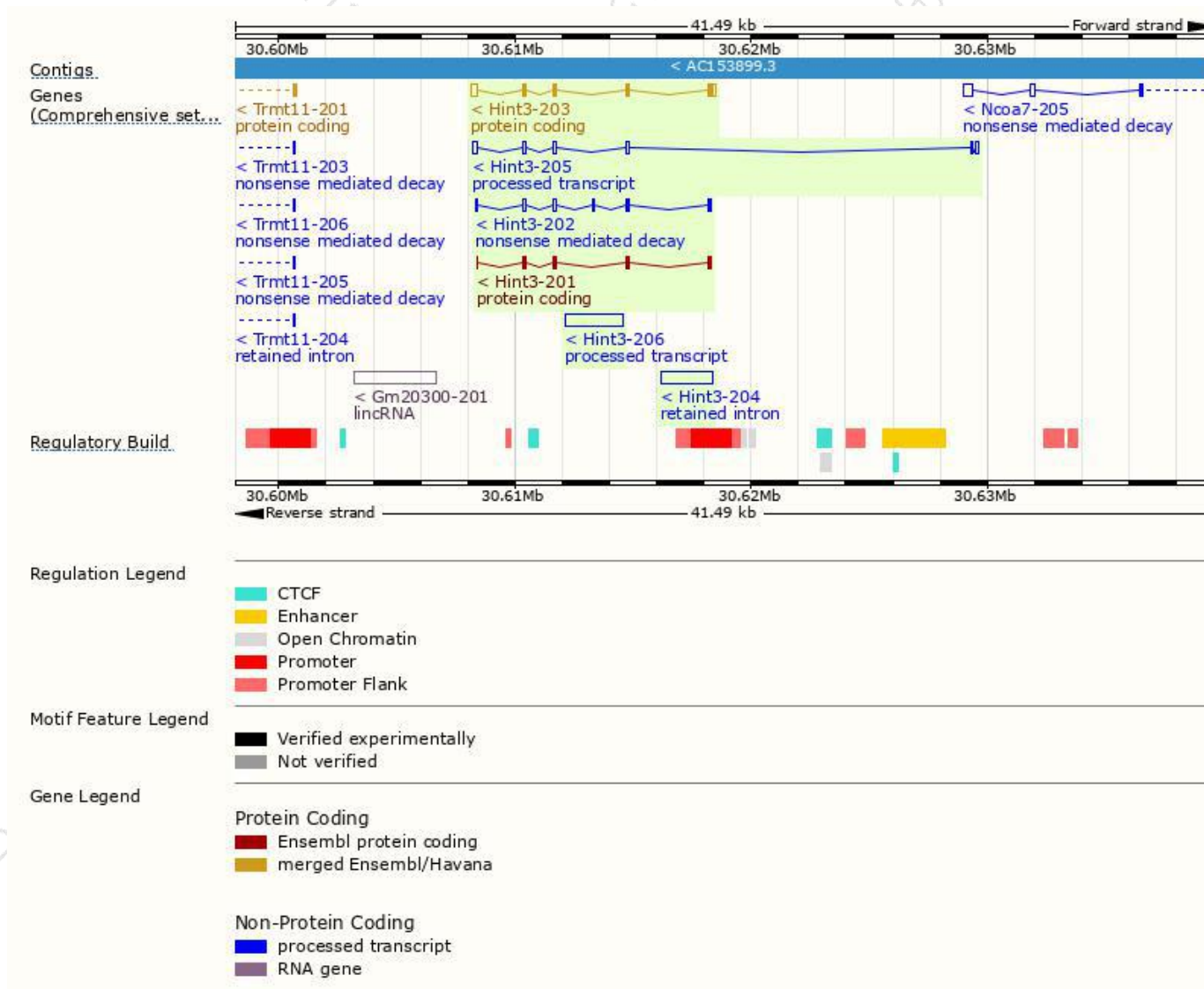
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Hint3-203	<a href="#">ENSMUST00000161074.7</a>	875	<a href="#">165aa</a>	Protein coding	<a href="#">CCDS23764</a>	<a href="#">Q9CPS6</a>	TSL:1 GENCODE basic APPRIS P1
Hint3-201	<a href="#">ENSMUST00000019925.6</a>	509	<a href="#">164aa</a>	Protein coding	-	<a href="#">F8WH96</a>	CDS 5' incomplete TSL:3
Hint3-202	<a href="#">ENSMUST00000160646.2</a>	616	<a href="#">86aa</a>	Nonsense mediated decay	-	<a href="#">E9Q7F8</a>	CDS 5' incomplete TSL:3
Hint3-206	<a href="#">ENSMUST00000217266.1</a>	2445	No protein	Processed transcript	-	-	TSL:NA
Hint3-205	<a href="#">ENSMUST00000216617.1</a>	687	No protein	Processed transcript	-	-	TSL:2
Hint3-204	<a href="#">ENSMUST00000214782.1</a>	2165	No protein	Retained intron	-	-	TSL:NA

The strategy is based on the design of *Hint3-203* transcript,The transcription is shown below

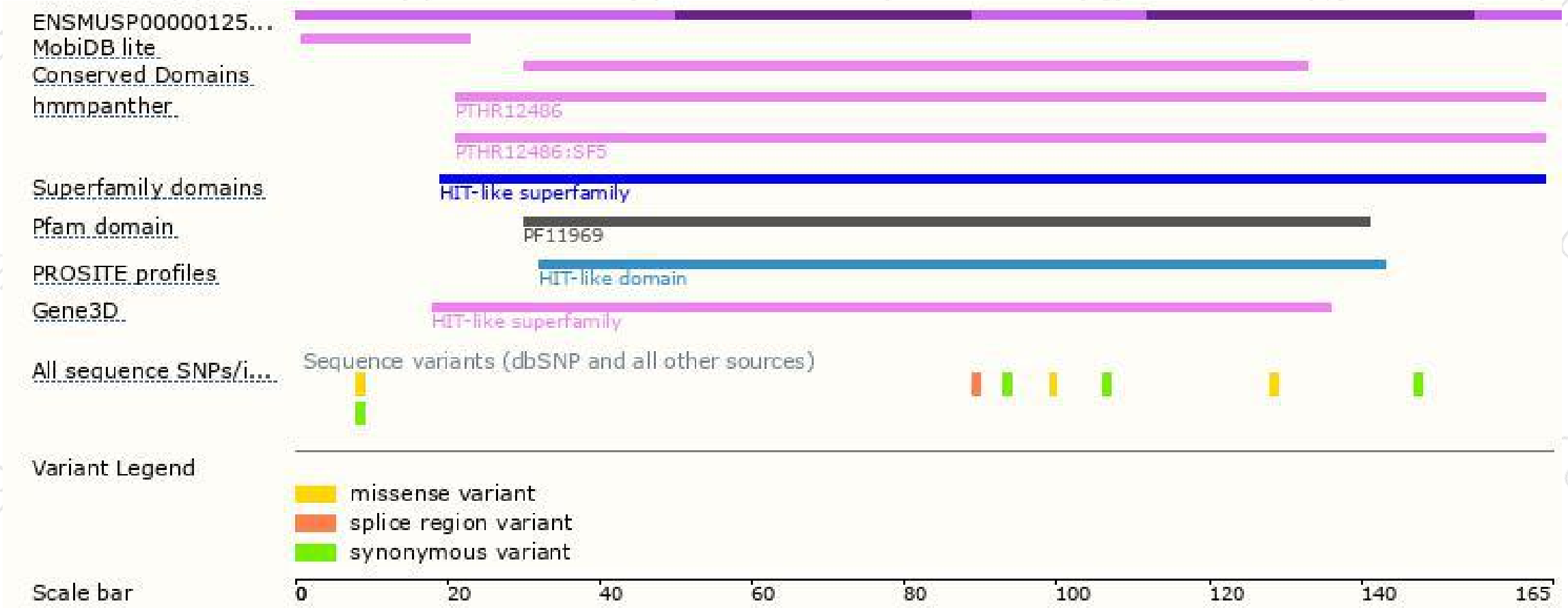


# Genomic location distribution





# Protein domain



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

Tel: 025-5864 1534

