

# *Dgkh* Cas9-KO Strategy

**Designer:** Daohua Xu

**Reviewer:** Huimin Su

**Design Date:** 2020-4-15

# Project Overview

**Project Name**

*Dgkh*

**Project type**

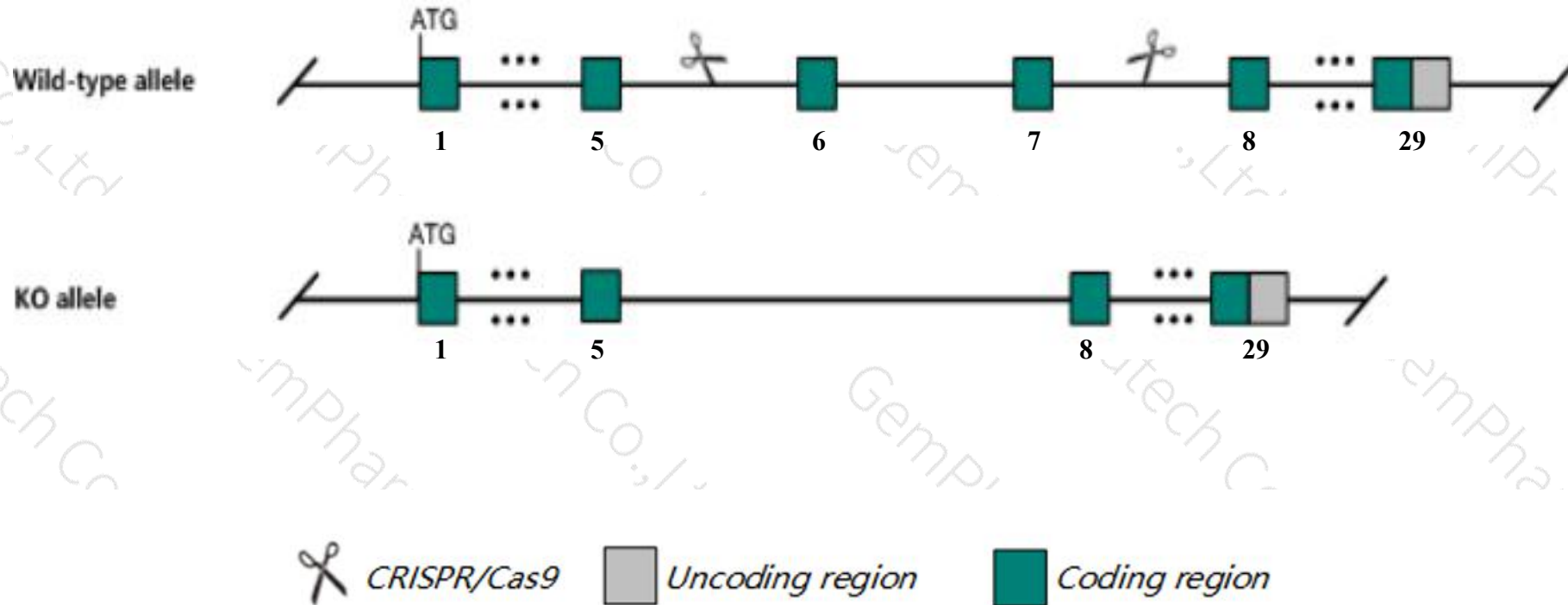
**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

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



- The *Dgkh* gene has 6 transcripts. According to the structure of *Dgkh* gene, exon6-exon7 of *Dgkh-201* (ENSMUST00000074729.5) transcript is recommended as the knockout region. The region contains 233bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Dgkh* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Dgkh* gene is located on the Chr14. 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)

## Dgkh diacylglycerol kinase, eta [Mus musculus (house mouse)]

Gene ID: 380921, updated on 13-Mar-2020

### Summary



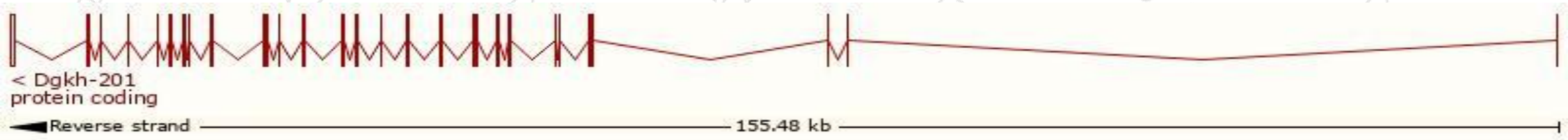
<b>Official Symbol</b>	Dgkh provided by <a href="#">MGI</a>
<b>Official Full Name</b>	diacylglycerol kinase, eta provided by <a href="#">MGI</a>
<b>Primary source</b>	<a href="#">MGI:MGI:2444188</a>
<b>See related</b>	<a href="#">Ensembl:ENSMUSG00000034731</a>
<b>Gene type</b>	protein coding
<b>RefSeq 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>	5930402B05Rik, D130015C16, DGK
<b>Expression</b>	Broad expression in testis adult (RPKM 3.4), cortex adult (RPKM 2.7) and 18 other tissues <a href="#">See more</a>
<b>Orthologs</b>	<a href="#">human</a> <a href="#">all</a>

# Transcript information (Ensembl)

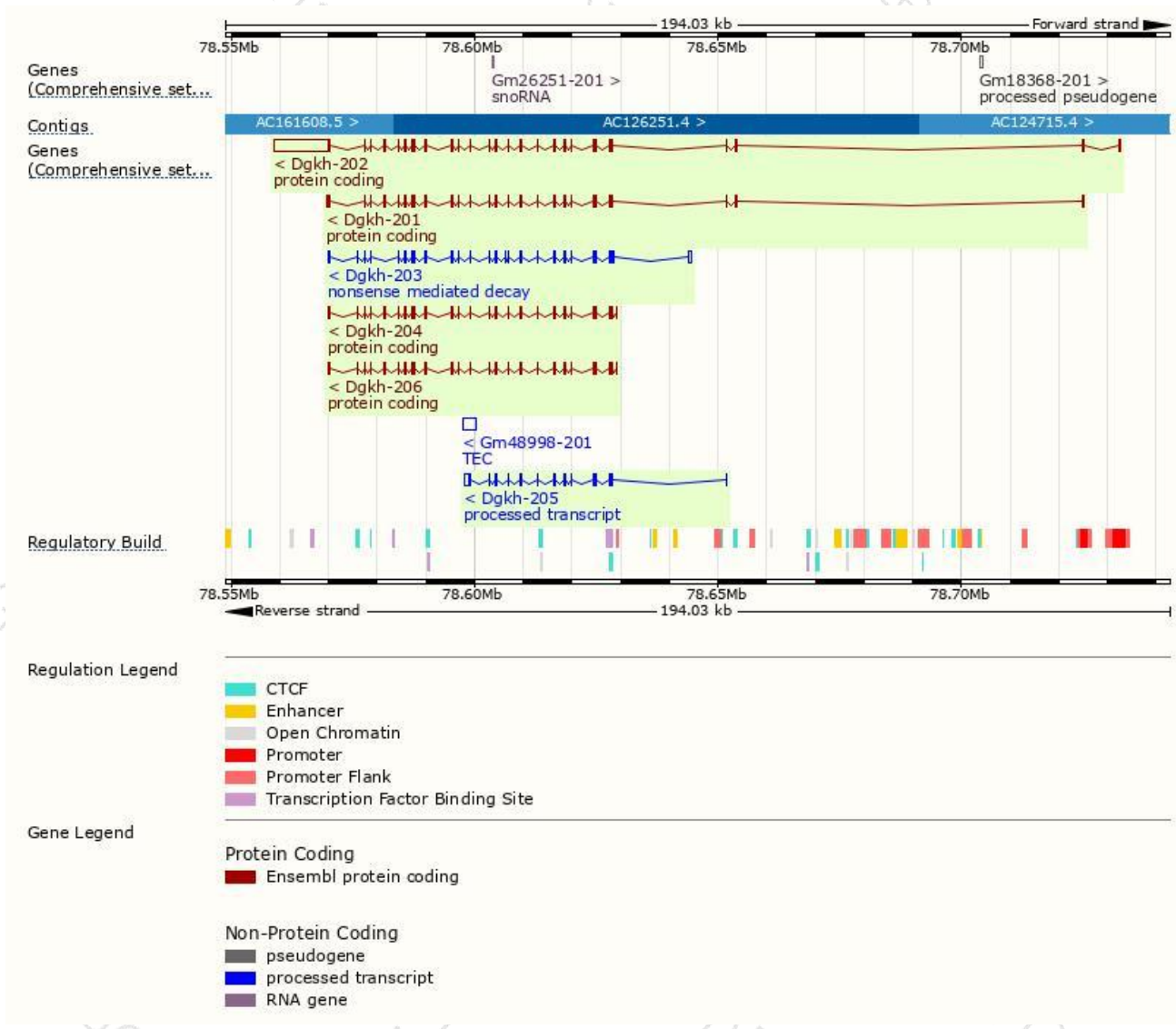
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Dgkh-201	<a href="#">ENSMUST00000074729.5</a>	3967	<a href="#">1156aa</a>	Protein coding	<a href="#">CCDS36986</a>	<a href="#">D3YXJ0</a>	TSL:5 GENCODE basic APPRIS P2
Dgkh-202	<a href="#">ENSMUST00000226342.2</a>	15257	<a href="#">1180aa</a>	Protein coding	-	<a href="#">A0A2I3BQ48</a>	GENCODE basic APPRIS ALT 2
Dgkh-204	<a href="#">ENSMUST00000227767.1</a>	3319	<a href="#">1032aa</a>	Protein coding	-	<a href="#">A0A2I3BQ43</a>	GENCODE basic
Dgkh-206	<a href="#">ENSMUST00000228362.1</a>	3308	<a href="#">1078aa</a>	Protein coding	-	<a href="#">A0JP53</a>	GENCODE basic
Dgkh-203	<a href="#">ENSMUST00000227537.1</a>	4073	<a href="#">443aa</a>	Nonsense mediated decay	-	<a href="#">A0A2I3BQA6</a>	
Dgkh-205	<a href="#">ENSMUST00000227820.1</a>	2493	No protein	Processed transcript	-	-	

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



# Genomic location distribution

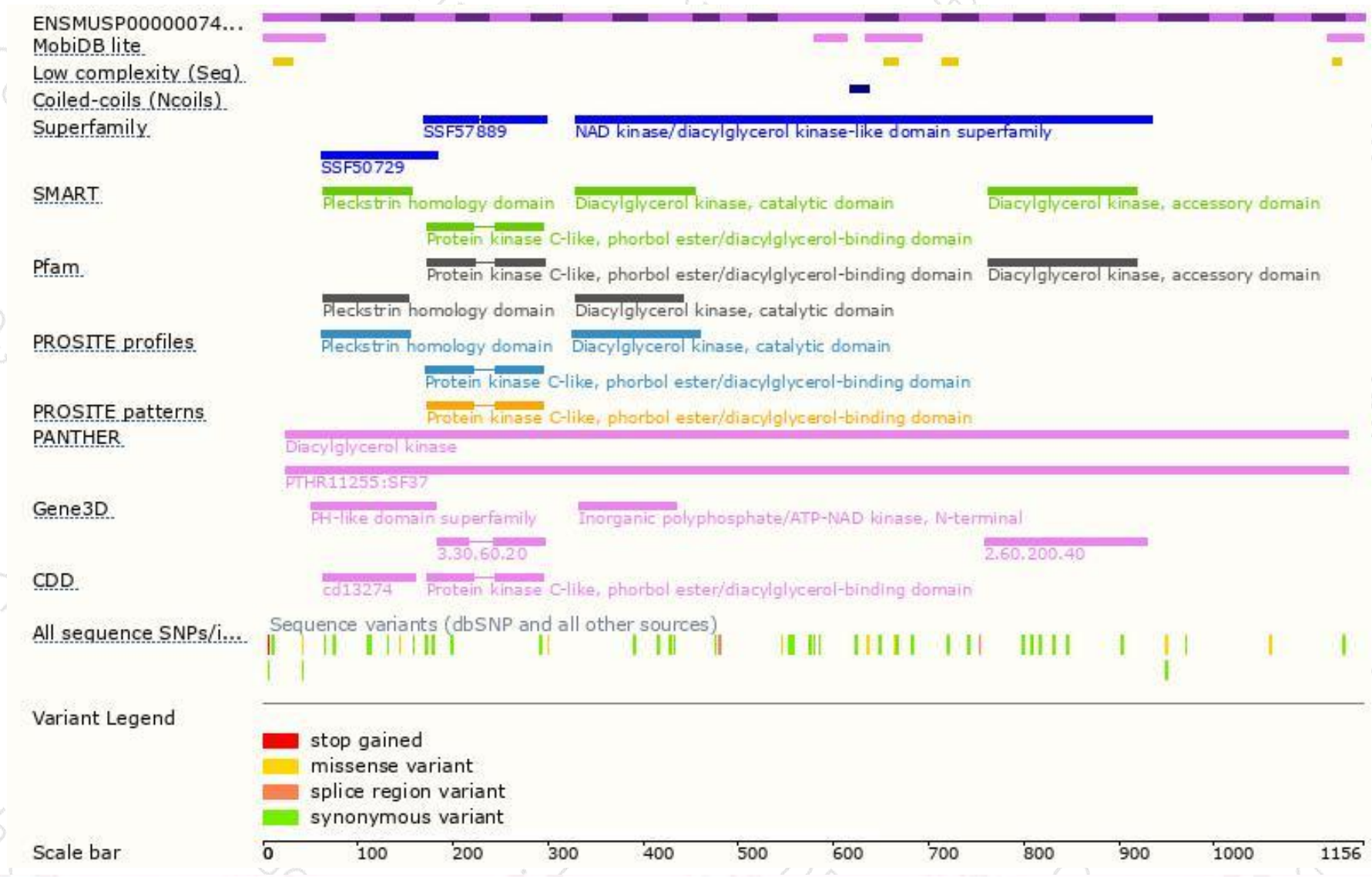




# Protein domain



集萃药康  
GemPharmatech



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

Tel: 400-9660890

