

Dgkg Cas9-CKO Strategy

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Project Overview

Project Name

Dgkg

Project type

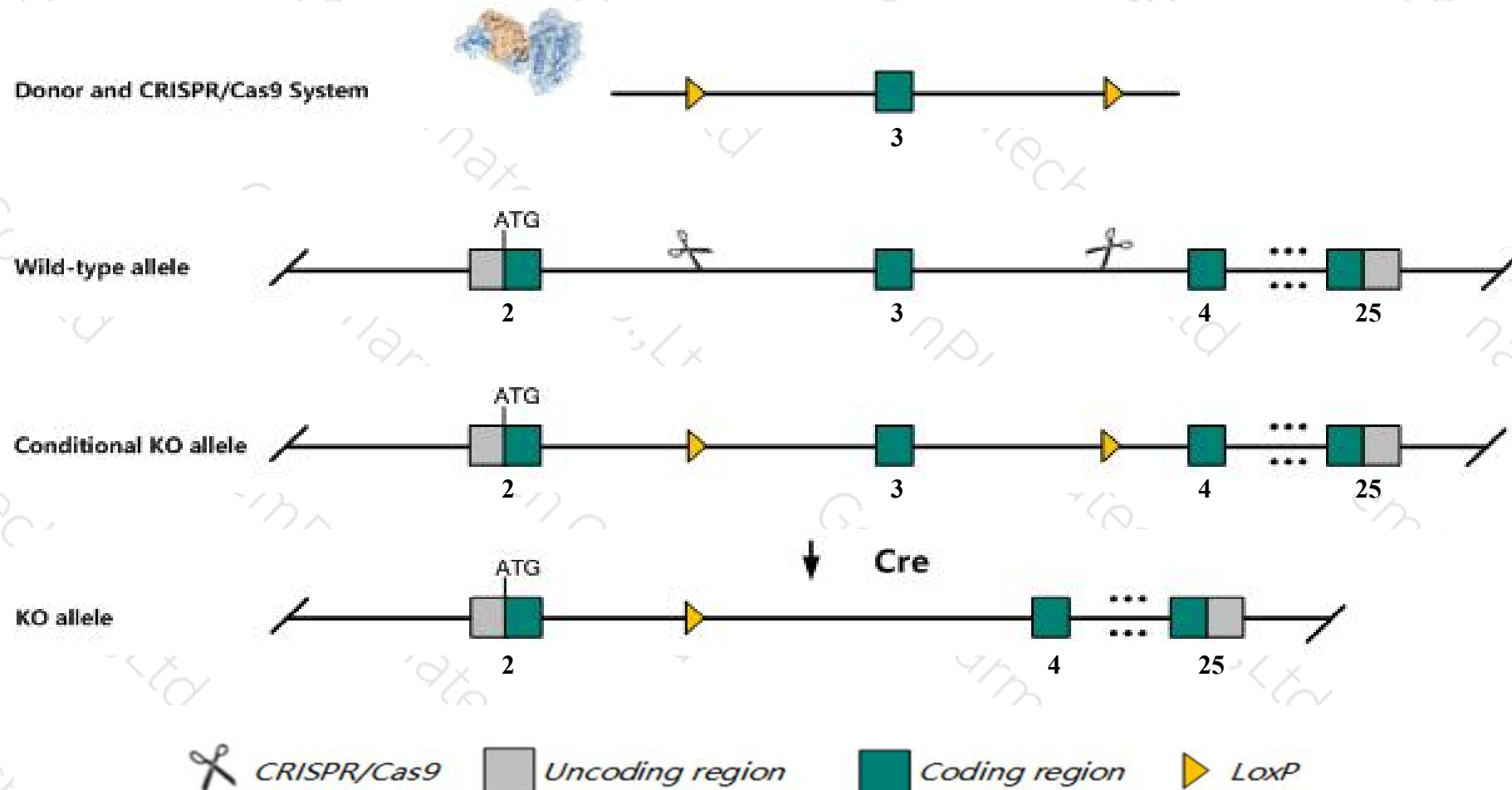
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

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



- The *Dgkg* gene has 5 transcripts. According to the structure of *Dgkg* gene, exon3 of *Dgkg-202* (ENSMUST00000089925.9) transcript is recommended as the knockout region. The region contains 77bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Dgkg* 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 *Dgkg* gene is located on the Chr16. 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)

Dgkg diacylglycerol kinase, gamma [Mus musculus (house mouse)]

Gene ID: 110197, updated on 19-Mar-2019

Summary



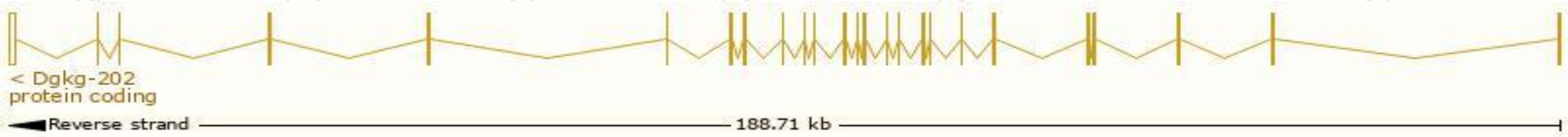
Official Symbol	Dgkg provided by MGI
Official Full Name	diacylglycerol kinase, gamma provided by MGI
Primary source	MGI:MGI:105060
See related	Ensembl:ENSMUSG00000022861
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2900055E17Rik, 90kDa, A1854428, Dagk3, E430001K23Rik, mKIAA4131
Expression	Biased expression in cerebellum adult (RPKM 10.5), frontal lobe adult (RPKM 4.6) and 4 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

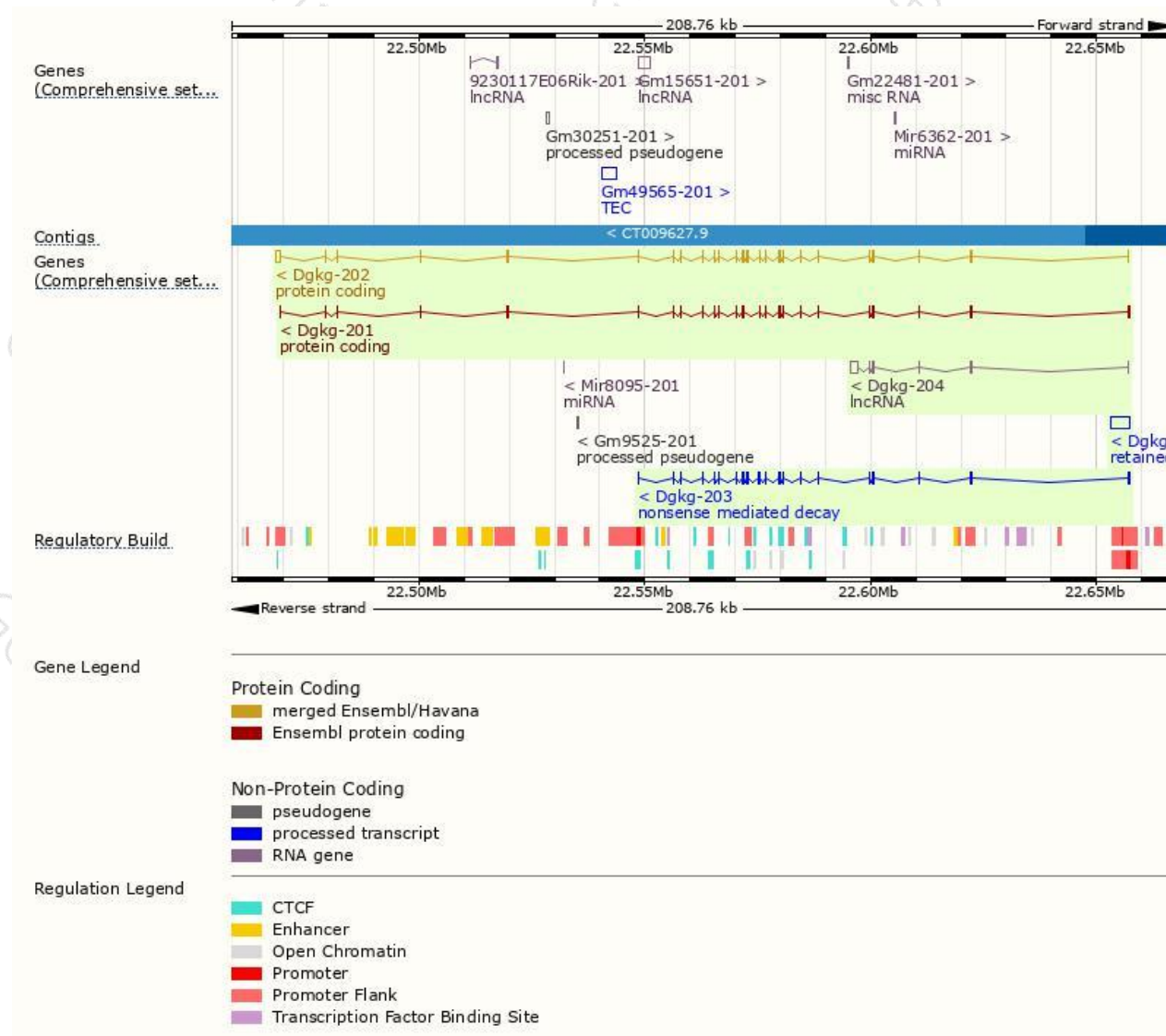
The gene has 5 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Dgkg-202	ENSMUST00000089925.9	3555	788aa	Protein coding	CCDS28068	Q91WG7	TSL:1 GENCODE basic APPRIS P3
Dgkg-201	ENSMUST00000023578.13	2725	749aa	Protein coding	CCDS84217	Q8C413	TSL:1 GENCODE basic APPRIS ALT2
Dgkg-203	ENSMUST00000137311.1	2651	392aa	Nonsense mediated decay	-	F2Z409	TSL:1
Dgkg-205	ENSMUST00000231249.1	3916	No protein	Retained intron	-	-	
Dgkg-204	ENSMUST00000150553.1	2177	No protein	lncRNA	-	-	TSL:1

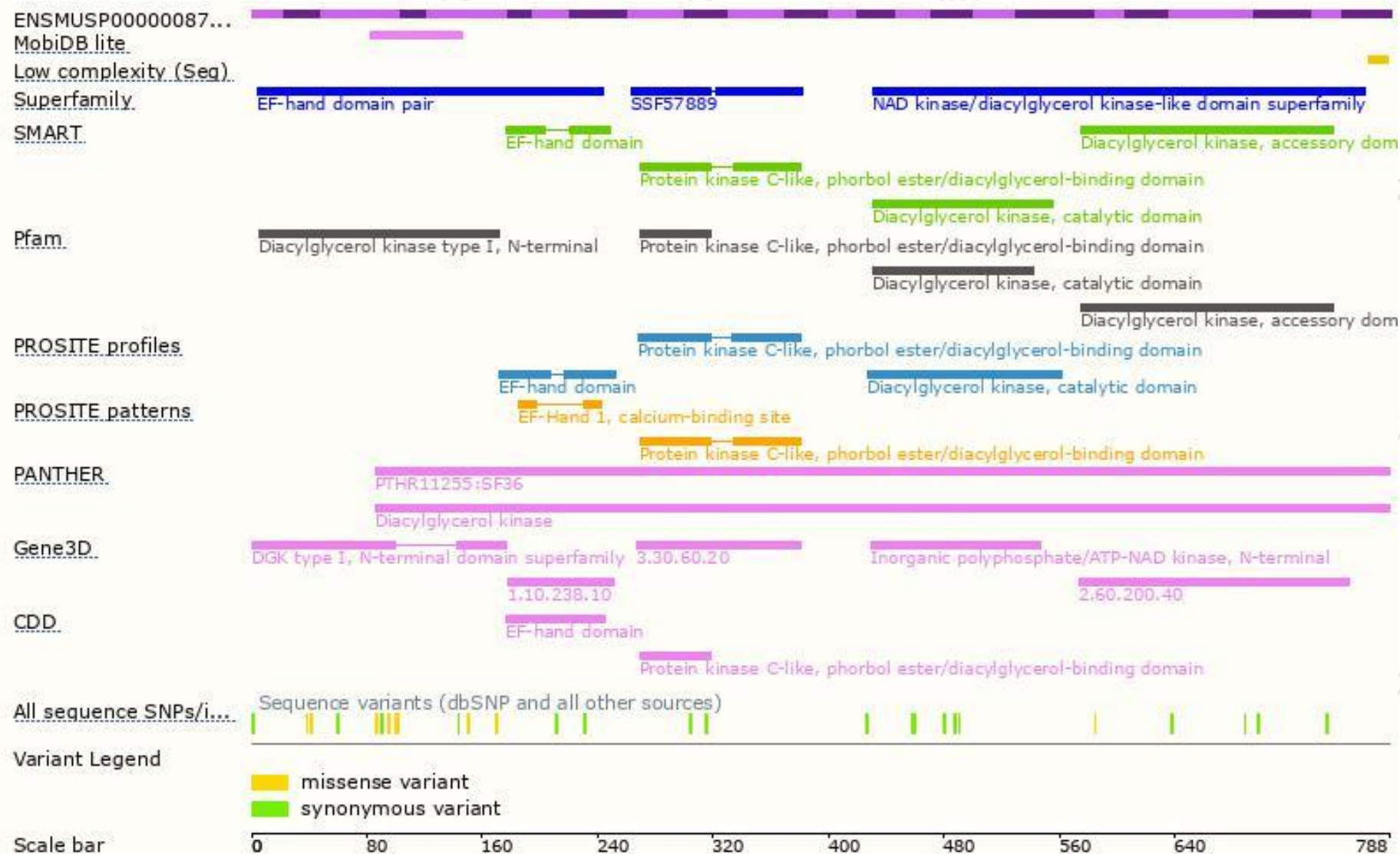
The strategy is based on the design of *Dgkg-202* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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