Nup205 Cas9-CKO *Strategy*

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Project Overview

Project Name	*Nup205*
Project type	Cas9-CKO
Animal background	C57BL/6JGpt

Conditional Knockout strategy

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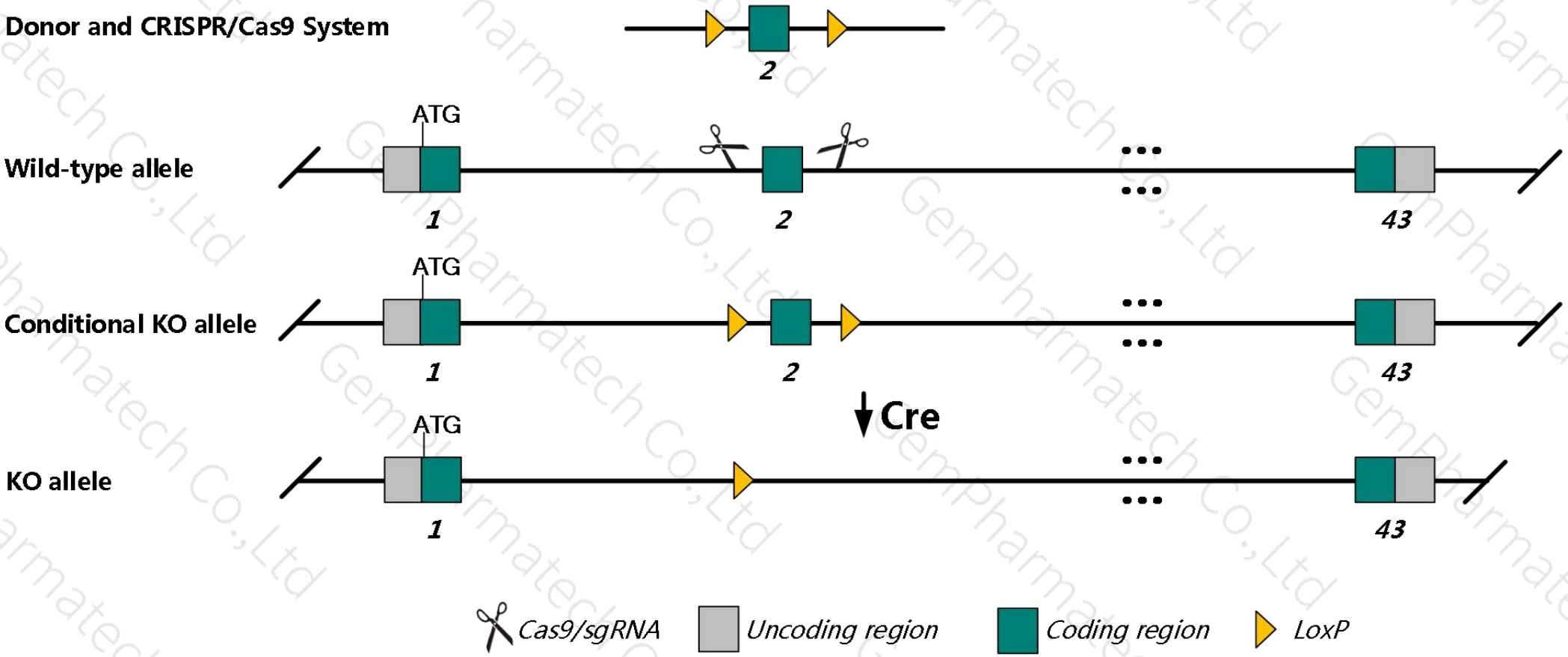
This model will use CRISPR/Cas9 technology to edit the *Nup205* gene. The schematic diagram is as follows:



Technical routes

- The *Nup205* gene has 7 transcripts, According to the structure of *Nup205* gene, exon2 of *Nup205-201* transcript is recommended as the knockout region.The region contains the 143bp coding seqence.Knock out the region,result in destruction of protein.

- This project uses CRISPR/Cas9 technology to modify *Nup205* gene. The brief process is as follows: gRNA was transcribed in vitro, donor was constructed, Cas9, gRNA and donor were microinjected into fertilized eggs of C57BL/6JGpt mice and homologous recombination was carried out to obtain F0 mice. A stable and hereditary F1 generation mouse model was obtained by mating F0 generation mice with C57BL/6JGpt mice which were confirmed positive by PCR-sequencing.

- 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 *Nup205* gene is located in the Chr6. If the knockout mice are mixed with other mice, two target genes are avoided on the same chromosome as possible, otherwise the offspring of mice with double gene positive and homozygous gene knockout can not be obtained.

- 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）

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Nup205 nucleoporin 205 [*Mus musculus* (house mouse)]

Gene ID: 70699, updated on 8-Dec-2018

Summary

Official Symbol	Nup205 provided by MGI
Official Full Name	nucleoporin 205 provided by MGI
Primary source	MGI:MGI:2141625
See related	Ensembl:ENSMUSG00000038759
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	AV248391; mKIAA0225; 3830404O05Rik
Expression	Ubiquitous expression in testis adult (RPKM 28.2), CNS E11.5 (RPKM 14.0) and 24 other tissues See more
Orthologs	human all

Transcript information （Ensembl

The gene has 7 transcripts, and all transcripts are shown below ：

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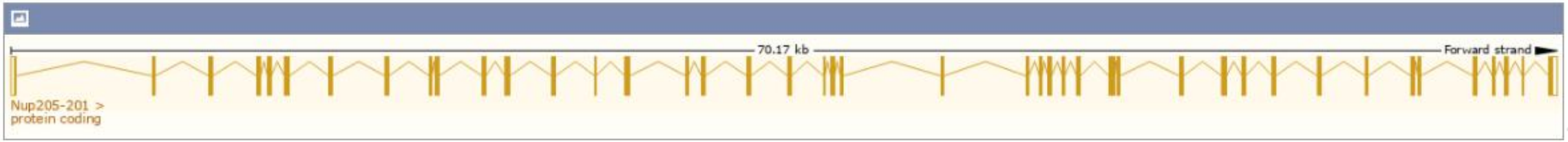
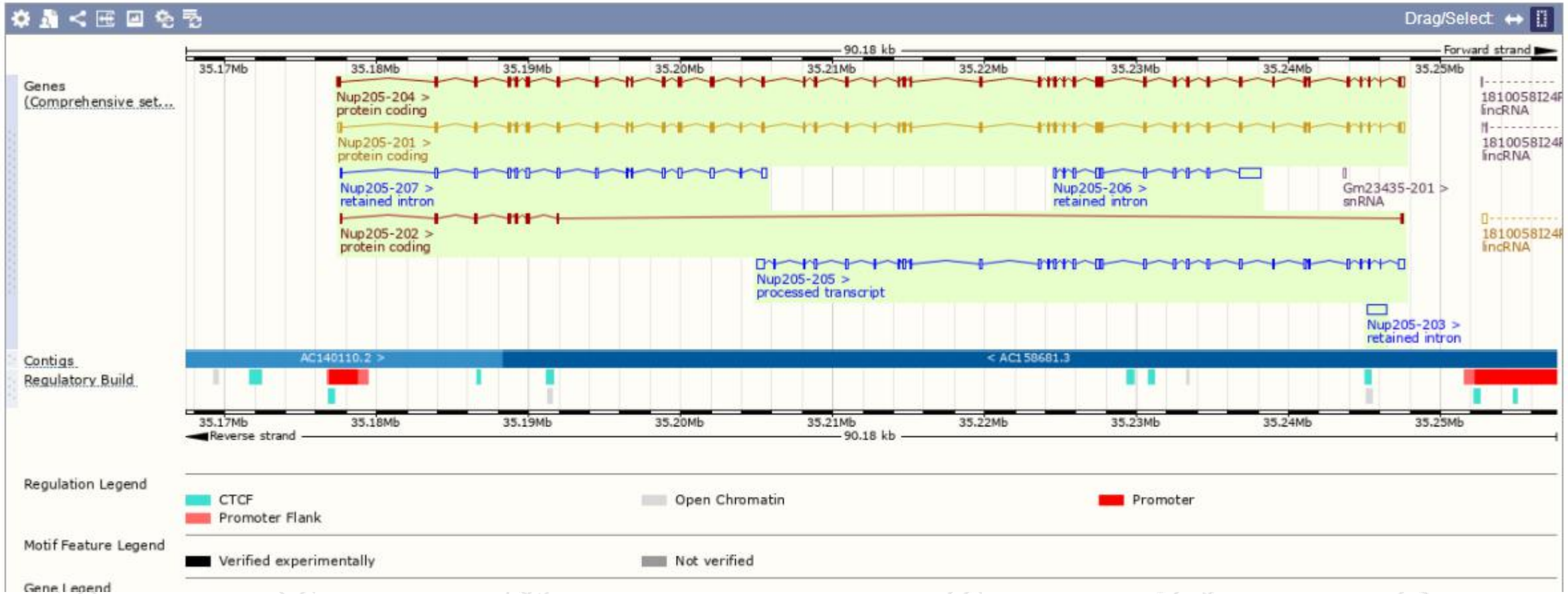
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	RefSeq	Flags
Nup205-201	ENSMUST00000043815.15	6412	2008aa	Protein coding	CCDS57418	B9EJ54	NM_027513 NP_081789	TSL:1 GENCODE basic APPRIS P2
Nup205-204	ENSMUST00000201374.3	6411	2061aa	Protein coding	-	A0A0J9YUD5	-	TSL:1 GENCODE basic APPRIS ALT2
Nup205-202	ENSMUST00000170234.1	1120	322aa	Protein coding	-	E9Q880	-	TSL:5 GENCODE basic
Nup205-205	ENSMUST00000201609.3	4508	No protein	Processed transcript	-	-	-	TSL:1
Nup205-206	ENSMUST00000201842.1	2752	No protein	Retained intron	-	-	-	TSL:5
Nup205-207	ENSMUST00000202898.1	2409	No protein	Retained intron	-	-	-	TSL:1
Nup205-203	ENSMUST00000200739.1	1299	No protein	Retained intron	-	-	-	TSL:NA

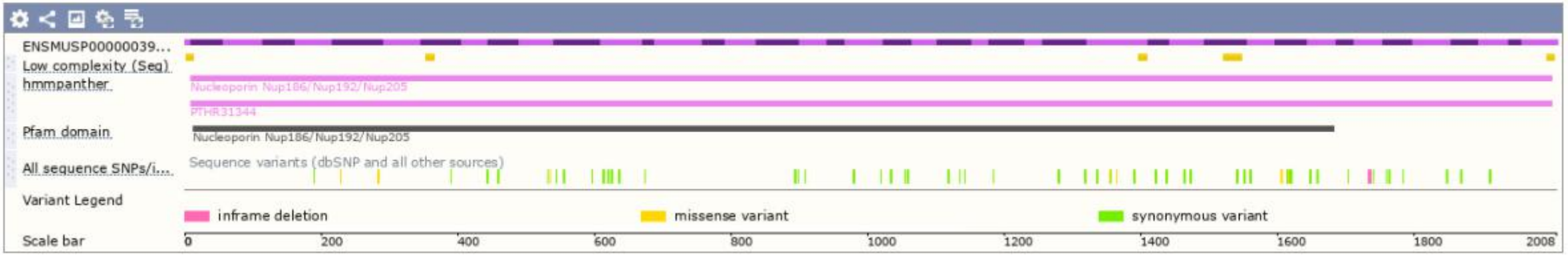
The strategy is based on the design of *Nup205-201* transcript,The transcription is shown below：



Genomic location distribution



Protein domain



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