

Pus7 Cas9-CKO Strategy

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Project Overview

Project Name

Pus7

Project type

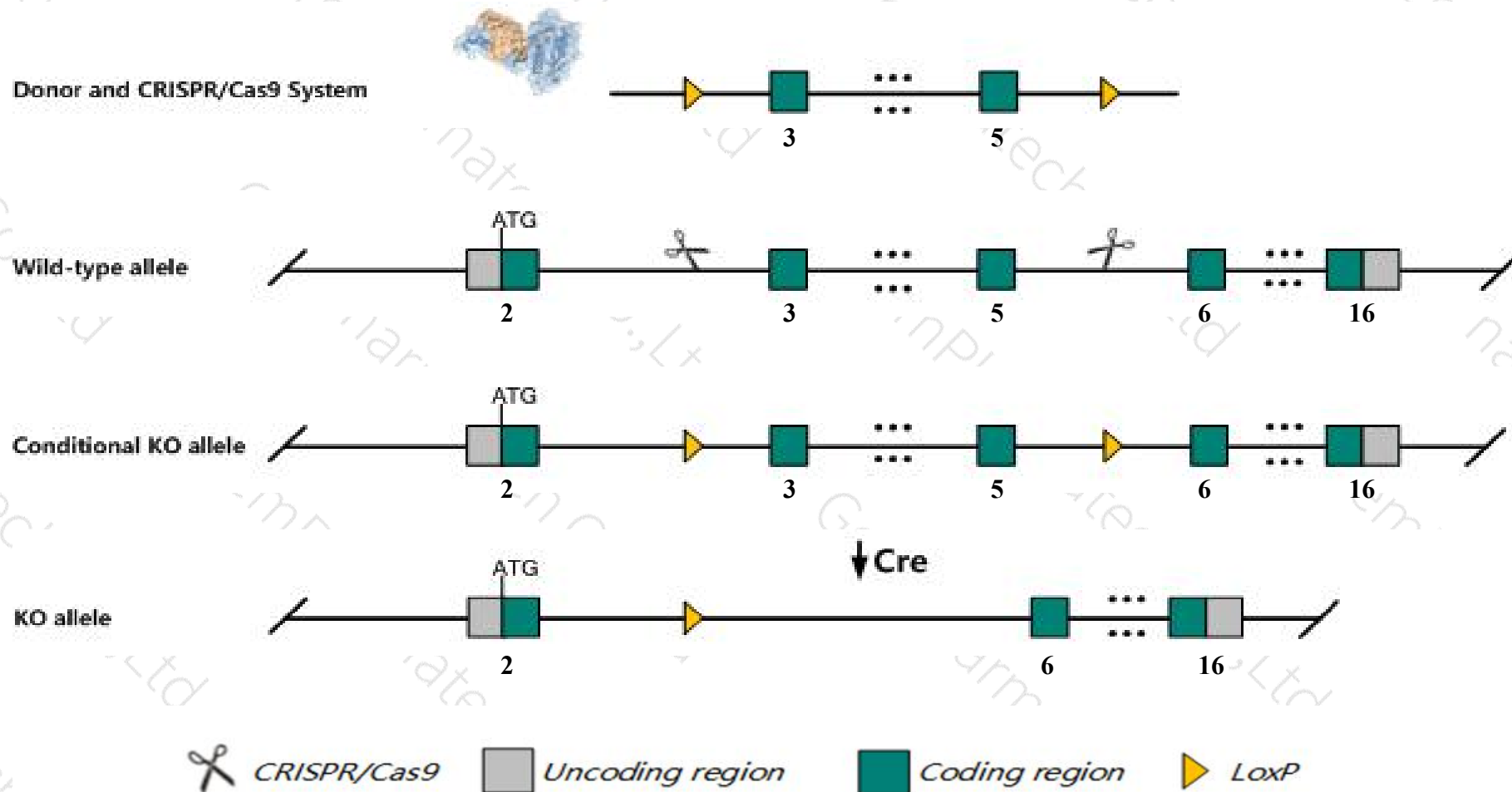
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pus7* gene. The schematic diagram is as follows:



Technical routes

- The *Pus7* gene has 9 transcripts. According to the structure of *Pus7* gene, exon3-exon5 of *Pus7*-204 (ENSMUST00000131992.7) transcript is recommended as the knockout region. The region contains 332bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pus7* 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 *Pus7* gene is located on the Chr5. 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)

Pus7 pseudouridylate synthase 7 [Mus musculus (house mouse)]

Gene ID: 78697, updated on 22-Mar-2019

Summary



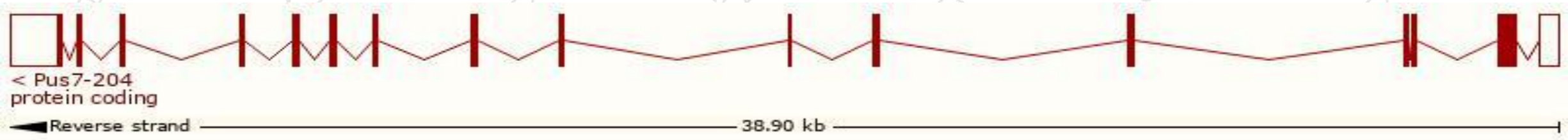
Official Symbol	Pus7 provided by MGI
Official Full Name	pseudouridylate synthase 7 provided by MGI
Primary source	MGI:MGI:1925947
See related	Ensembl:ENSMUSG000000057541
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	C330017I15Rik
Expression	Ubiquitous expression in bladder adult (RPKM 4.8), CNS E11.5 (RPKM 4.6) and 26 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

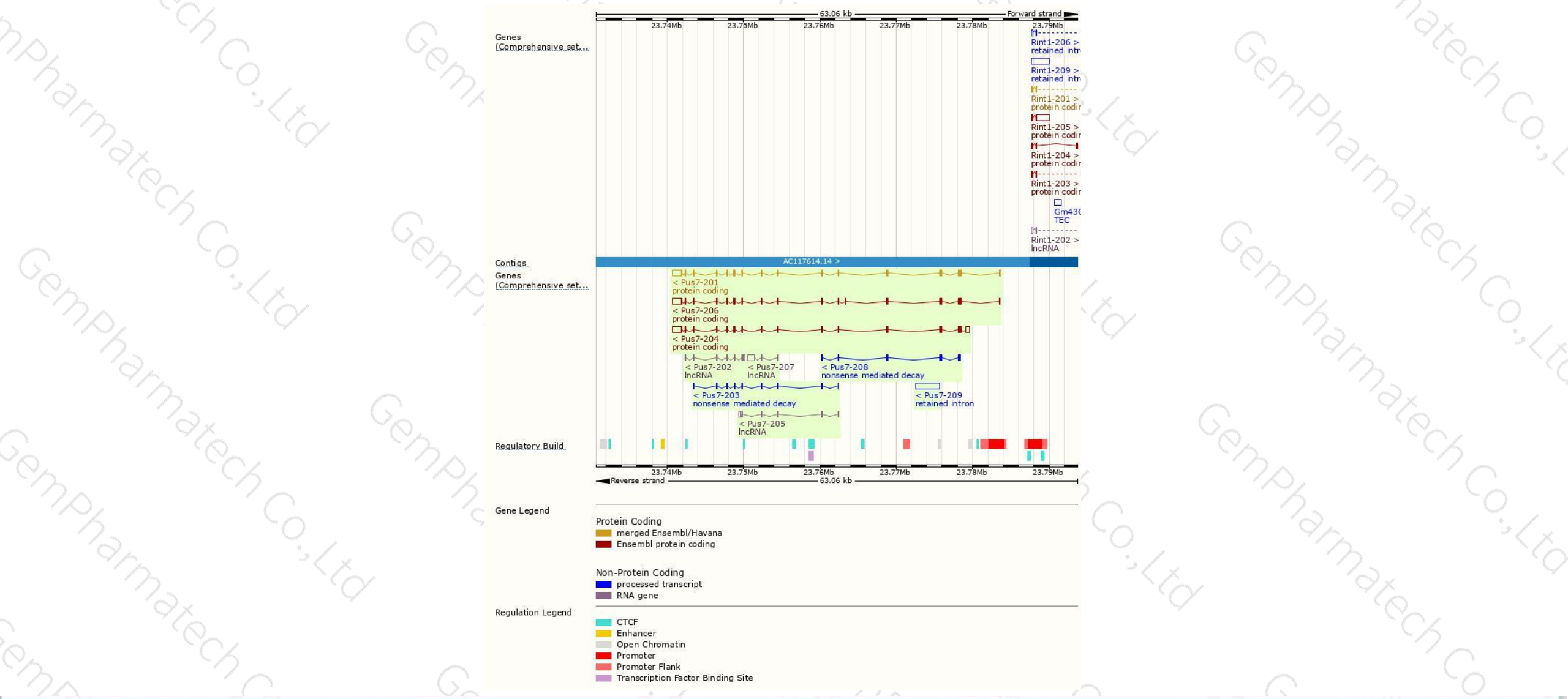
The gene has 9 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pus7-204	ENSMUST00000131992.7	3645	660aa	Protein coding	CCDS51431	Q91VU7	TSL:1 GENCODE basic APPRIS P3
Pus7-201	ENSMUST00000119946.7	3407	660aa	Protein coding	CCDS51431	Q91VU7	TSL:1 GENCODE basic APPRIS P3
Pus7-206	ENSMUST00000148618.7	3266	666aa	Protein coding	CCDS80219	Q91VU7	TSL:1 GENCODE basic APPRIS ALT2
Pus7-203	ENSMUST00000131404.1	888	185aa	Nonsense mediated decay	-	F7CG42	CDS 5' incomplete TSL:5
Pus7-208	ENSMUST00000151449.1	750	176aa	Nonsense mediated decay	-	F6XMS4	CDS 5' incomplete TSL:3
Pus7-209	ENSMUST00000195909.1	3118	No protein	Retained intron	-	-	TSL:NA
Pus7-207	ENSMUST00000148921.1	1114	No protein	lncRNA	-	-	TSL:3
Pus7-202	ENSMUST00000129848.7	773	No protein	lncRNA	-	-	TSL:3
Pus7-205	ENSMUST00000147922.7	721	No protein	lncRNA	-	-	TSL:3

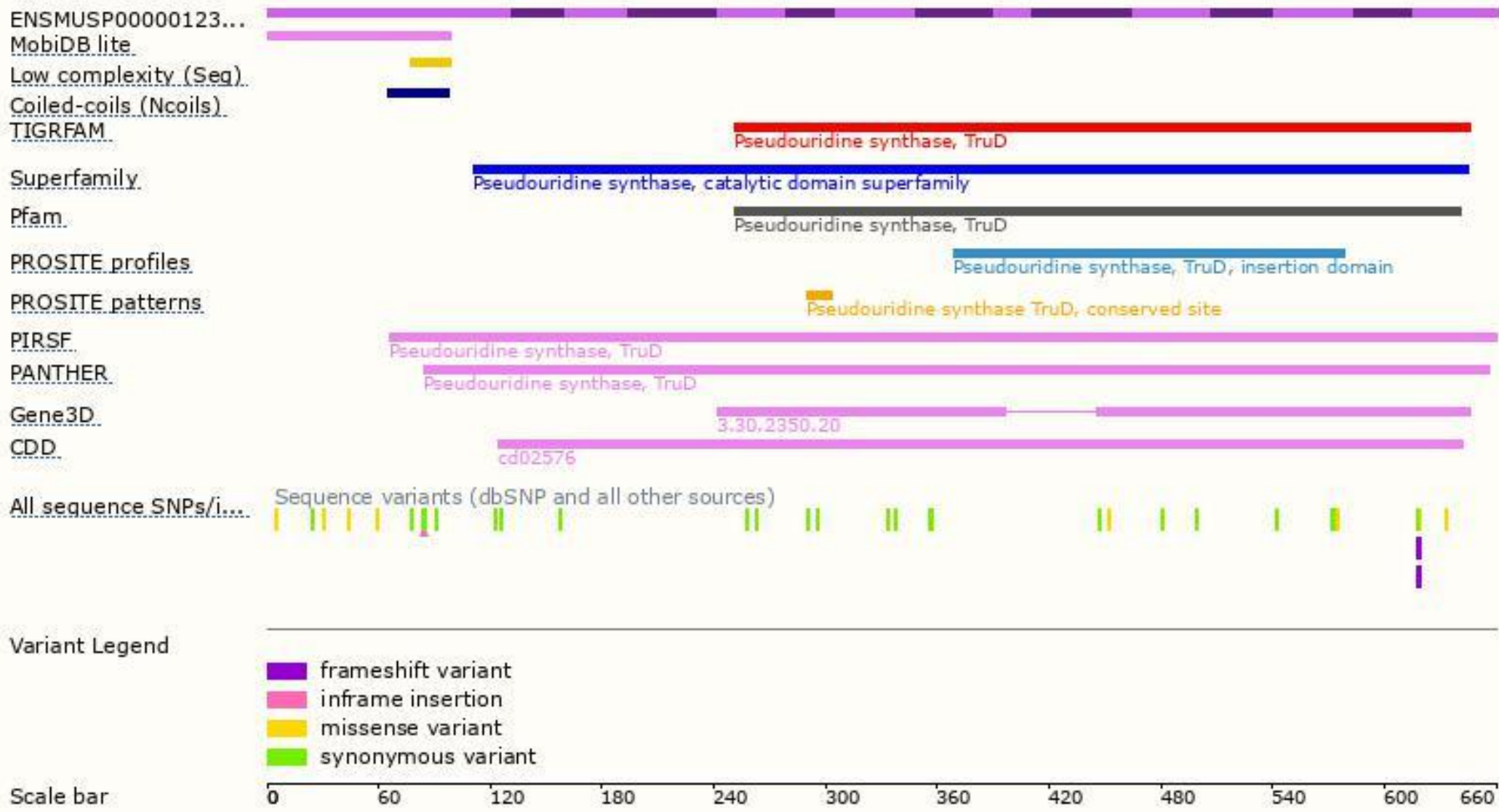
The strategy is based on the design of *Pus7-204* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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