

# ***Hnrnpdl*** Cas9-CKO Strategy

**Designer:**

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# Project Overview

**Project Name**

***Hnrnpdl***

**Project type**

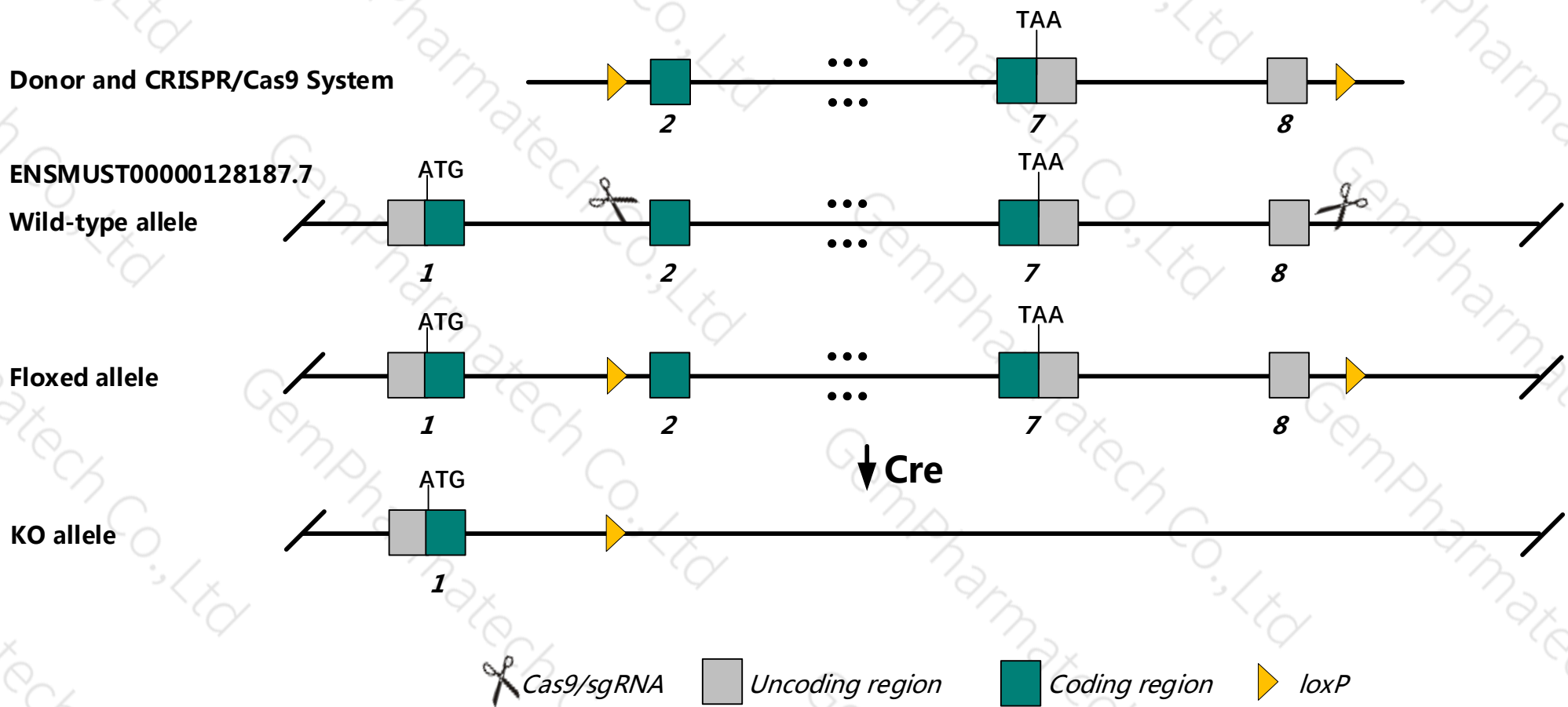
**Cas9-CKO**

**Strain background**

**C57BL/6JGpt**

# Conditional Knockout strategy

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



- The *Hnrnpdl* gene has 7 transcripts. According to the structure of *Hnrnpdl* gene, exon2-exon8 of *Hnrnpdl*-202 transcript is recommended as the knockout region. The region contains most of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Hnrnpdl* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA 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 was knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues or *Hnrnpdl* types.

- The KO region contains the functional region of the *Enoph1* gene. Knockout the region may affect its function of *Enoph1* gene.
- The *Hnrnpdl* 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 gene transcription and translation processes, all risks cannot be predicted under existing information.

# Gene information ( NCBI )

## Hnrnpdl heterogeneous nuclear ribonucleoprotein D-like [ *Mus musculus* (house mouse) ]

Gene ID: 50926, updated on 31-Jan-2019

### Summary

Official Symbol	Hnrnpdl provided by <a href="#">MGI</a>
Official Full Name	heterogeneous nuclear ribonucleoprotein D-like provided by <a href="#">MGI</a>
Primary source	<a href="#">MGI:MGI:1355299</a>
See related	<a href="#">Ensembl:ENSMUSG00000029328</a>
Gene type	protein coding
RefSeq status	VALIDATED
Organism	<a href="#">Mus musculus</a>
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	JKTBP; Hnrpd1; AA407431; AA959857; Hnrnpd11; hnRNP DL; hnRNP-DL; D5Wsu145e; D5Ert650e
Expression	Ubiquitous expression in CNS E11.5 (RPKM 88.2), CNS E14 (RPKM 86.7) and 27 other tissues <a href="#">See more</a>
Orthologs	<a href="#">human</a> <a href="#">all</a>

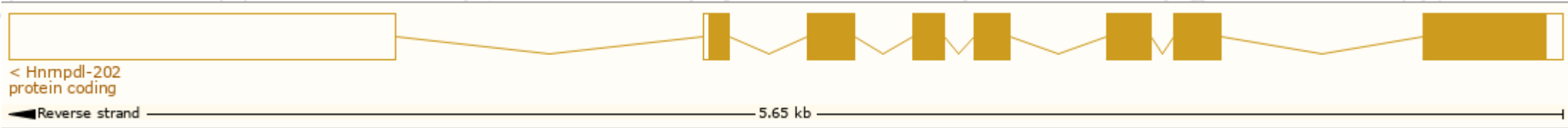


# Transcript information ( Ensembl )

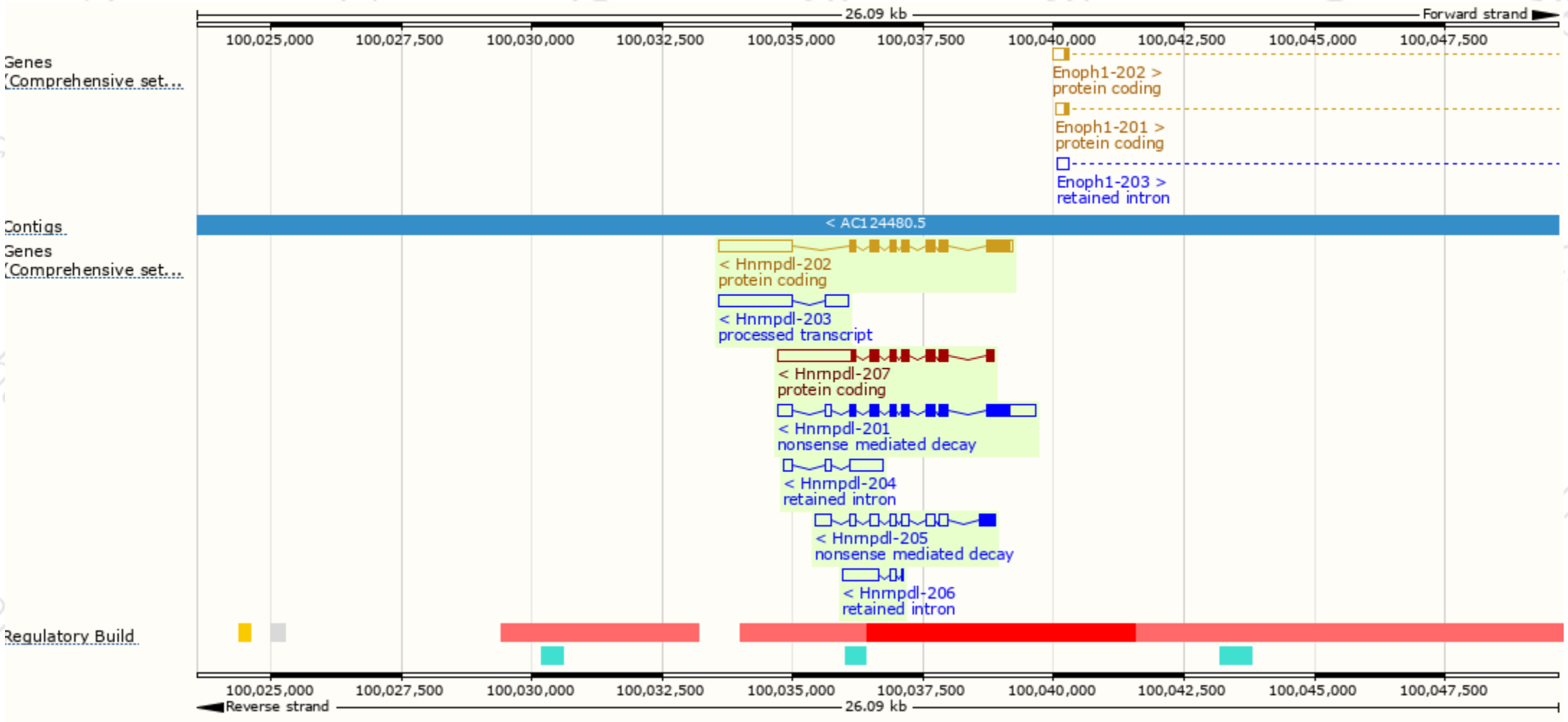
The gene has 7 transcripts, and all transcripts are shown below :

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Hnrnpdl-202	<a href="#">ENSMUST00000128187.7</a>	2752	<a href="#">420aa</a>	Protein coding	<a href="#">CCDS19460</a>	<a href="#">D3YTQ3</a>	TSL:1 Gencode basic APPRIS P1
Hnrnpdl-207	<a href="#">ENSMUST00000153442.7</a>	2374	<a href="#">323aa</a>	Protein coding	-	<a href="#">F6VQH5</a>	CDS 5' incomplete TSL:1
Hnrnpdl-201	<a href="#">ENSMUST00000086900.10</a>	2149	<a href="#">420aa</a>	Nonsense mediated decay	-	<a href="#">D3YTQ3</a>	TSL:5
Hnrnpdl-205	<a href="#">ENSMUST00000149384.7</a>	1477	<a href="#">100aa</a>	Nonsense mediated decay	-	<a href="#">F6ZKM7</a>	CDS 5' incomplete TSL:5
Hnrnpdl-203	<a href="#">ENSMUST00000135424.6</a>	1842	No protein	Processed transcript	-	-	TSL:1
Hnrnpdl-204	<a href="#">ENSMUST00000141337.1</a>	884	No protein	Retained intron	-	-	TSL:2
Hnrnpdl-206	<a href="#">ENSMUST00000151323.1</a>	846	No protein	Retained intron	-	-	TSL:2

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

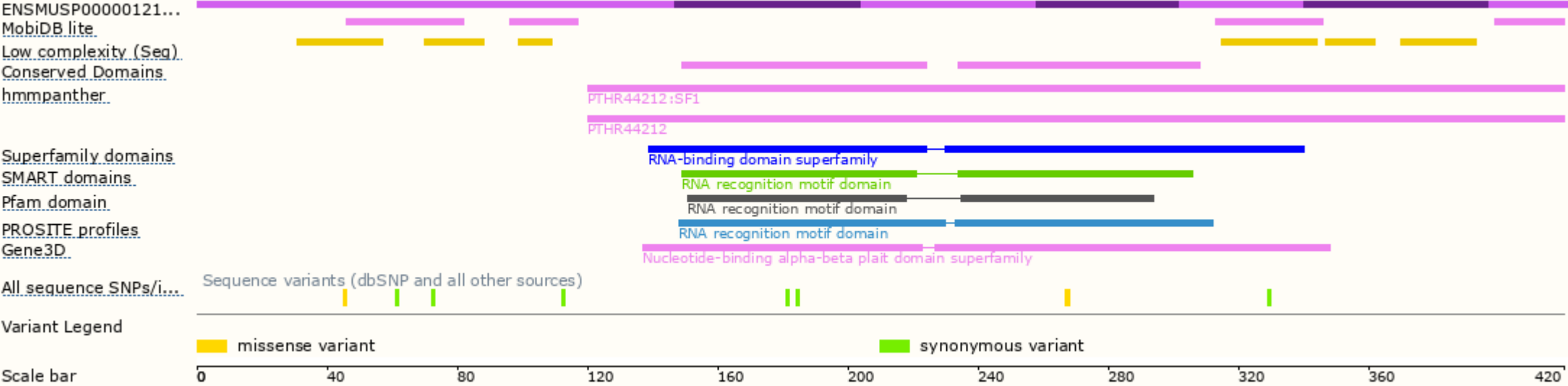


# Genomic location distribution





# Protein domain



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