

# ***Polr2c*** Cas9-KO Strategy

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# Project Overview

**Project Name**

***Polr2c***

**Project type**

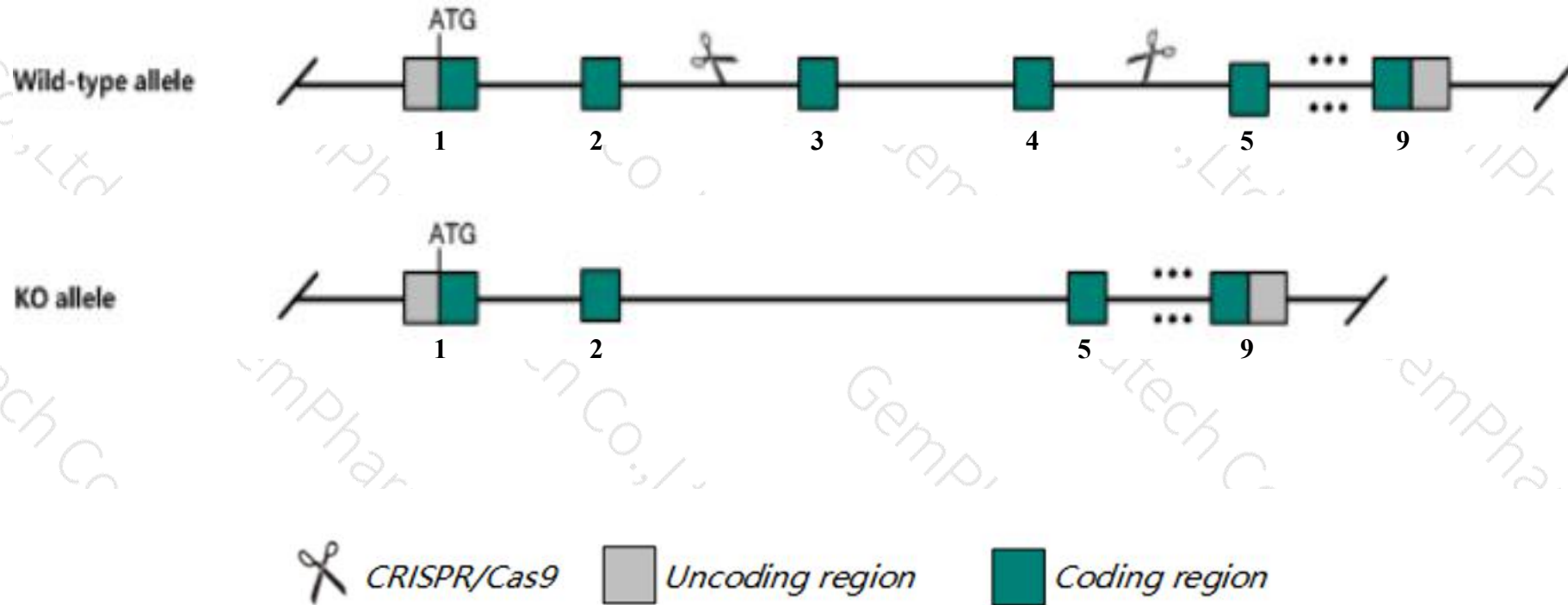
**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Polr2c* gene. The schematic diagram is as follows:



- The *Polr2c* gene has 7 transcripts. According to the structure of *Polr2c* gene, exon3-exon4 of *Polr2c-201* (ENSMUST00000109521.3) transcript is recommended as the knockout region. The region contains 122bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Polr2c* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Polr2c* gene is located on the Chr8. 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)

## Polr2c polymerase (RNA) II (DNA directed) polypeptide C [ *Mus musculus* (house mouse) ]

Gene ID: 20021, updated on 5-Apr-2020

### Summary



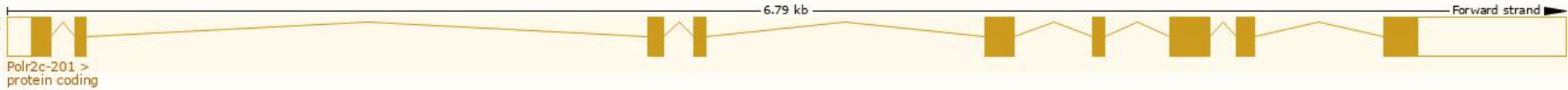
Official Symbol	Polr2c provided by <a href="#">MGI</a>
Official Full Name	polymerase (RNA) II (DNA directed) polypeptide C provided by <a href="#">MGI</a>
Primary source	<a href="#">MGI:MGI:109299</a>
See related	<a href="#">Ensembl:ENSMUSG00000031783</a>
Gene type	protein coding
RefSeq status	VALIDATED
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	RPB3; 33kDa; Rpo2-3; mRBP31
Expression	Ubiquitous expression in kidney adult (RPKM 36.8), CNS E14 (RPKM 33.0) and 28 other tissues <a href="#">See more</a>
Orthologs	<a href="#">human</a> <a href="#">all</a>

# Transcript information (Ensembl)

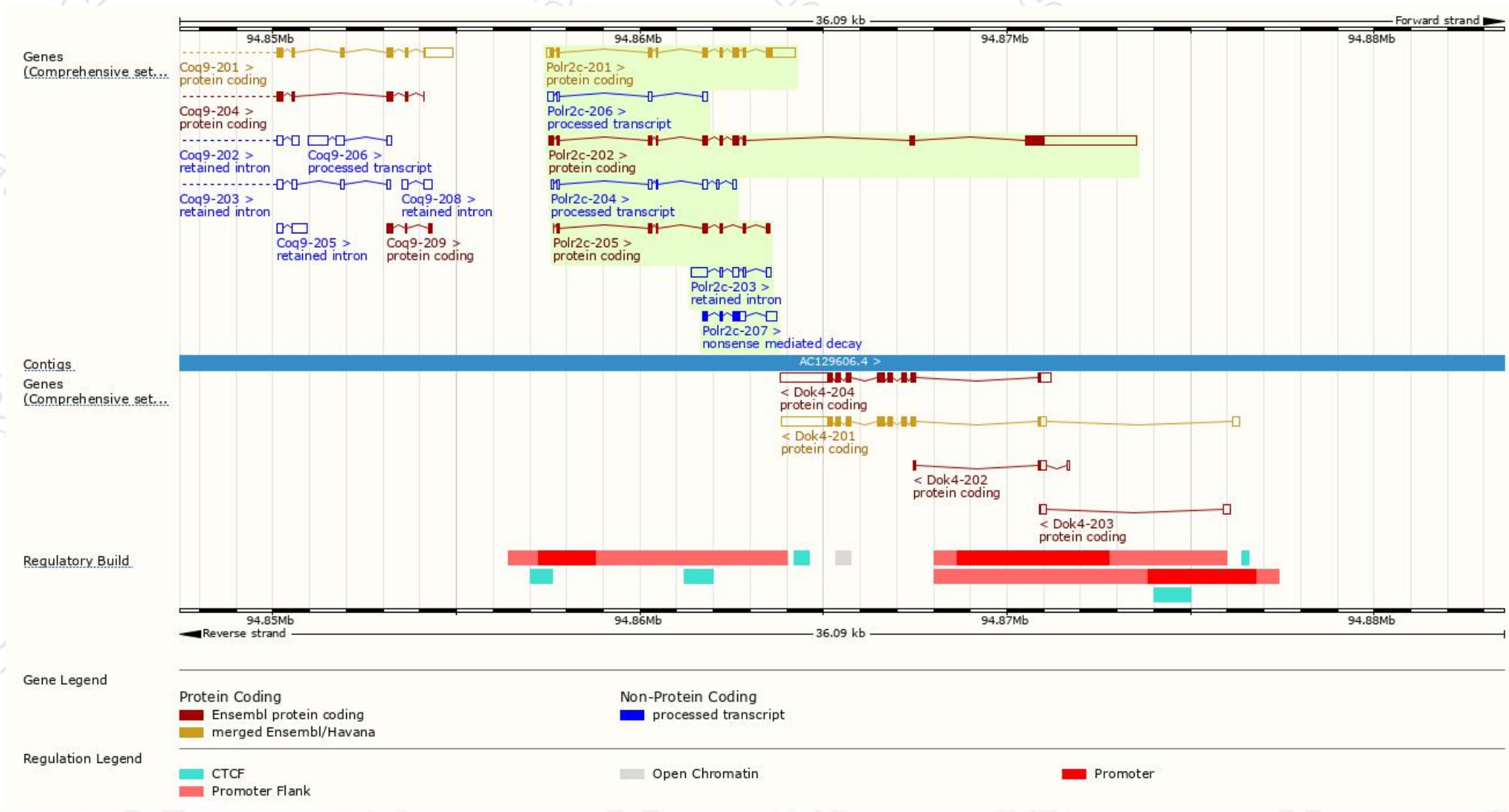
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Polr2c-201	<a href="#">ENSMUST00000109521.3</a>	1580	<a href="#">275aa</a>	Protein coding	<a href="#">CCDS40442</a>	<a href="#">P97760</a>	TSL:1 GENCODE basic APPRIS P1
Polr2c-202	<a href="#">ENSMUST00000211939.1</a>	3881	<a href="#">439aa</a>	Protein coding	-	<a href="#">A0A1D5RML8</a>	TSL:2 GENCODE basic
Polr2c-205	<a href="#">ENSMUST00000212124.1</a>	528	<a href="#">170aa</a>	Protein coding	-	<a href="#">A0A1D5RLD4</a>	CDS 5' incomplete TSL:3
Polr2c-207	<a href="#">ENSMUST00000212848.1</a>	830	<a href="#">128aa</a>	Nonsense mediated decay	-	<a href="#">A0A1D5RLM9</a>	CDS 5' incomplete TSL:3
Polr2c-204	<a href="#">ENSMUST00000212120.1</a>	530	No protein	Processed transcript	-	-	TSL:3
Polr2c-206	<a href="#">ENSMUST00000212744.1</a>	376	No protein	Processed transcript	-	-	TSL:3
Polr2c-203	<a href="#">ENSMUST00000211957.1</a>	855	No protein	Retained intron	-	-	TSL:2

The strategy is based on the design of *Polr2c-201* transcript, the transcription is shown below

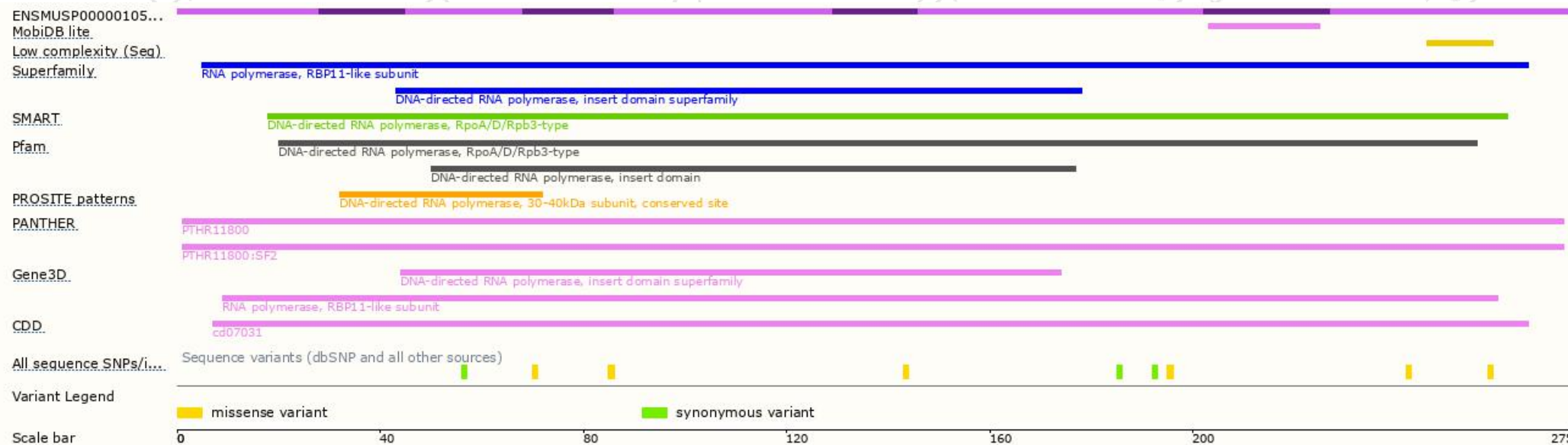


# Genomic location distribution





# Protein domain



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

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