

# ***Polr3c*** Cas9-KO Strategy

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Design Date: 2020-3-9

# Project Overview

**Project Name**

***Polr3c***

**Project type**

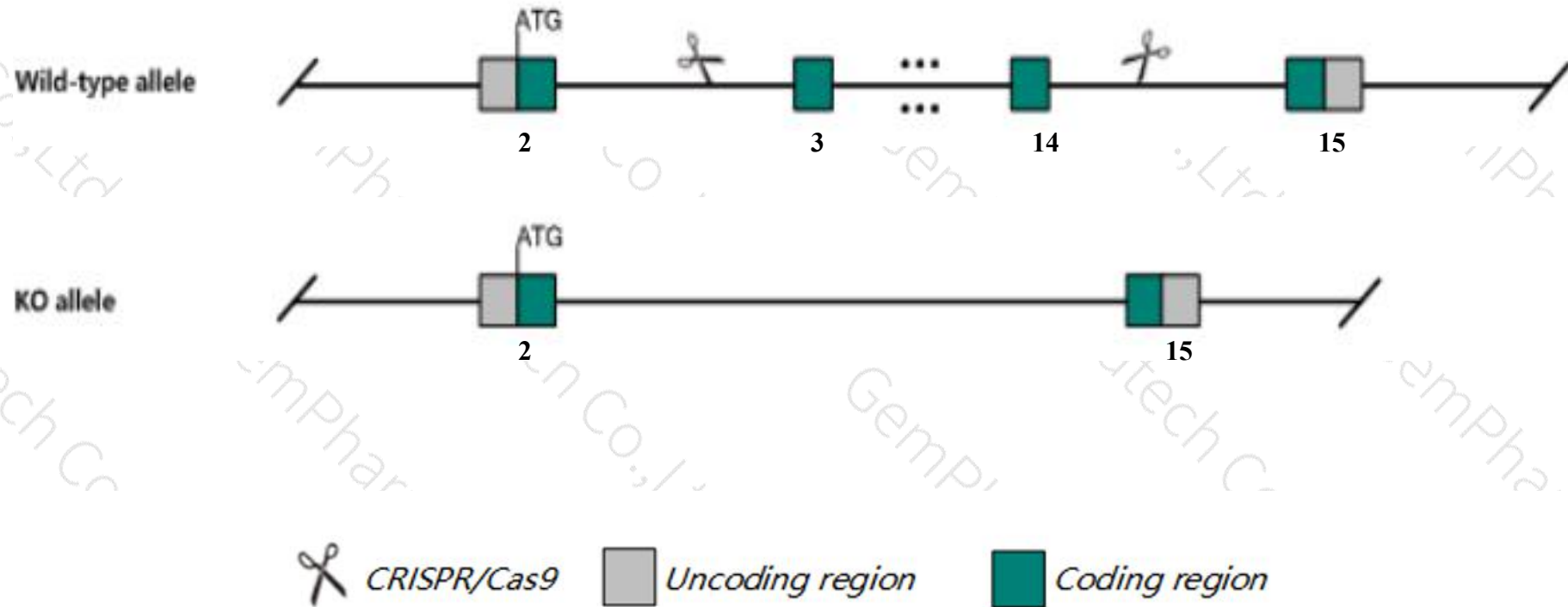
**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Polr3c* gene. The schematic diagram is as follows:



- The *Polr3c* gene has 6 transcripts. According to the structure of *Polr3c* gene, exon3-exon14 of *Polr3c-206* (ENSMUST00000154679.7) transcript is recommended as the knockout region. The region contains 1373bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Polr3c* gene. The brief process is as follows: CRISPR/Cas9 system

- *Gm22581*-201 and *Gm42783*-201 gene may be destroyed.
- The knockout region is about 3.5 kb away from the 5th end of the *Rnf115* gene, and its effect is unknown.
- The *Polr3c* gene is located on the Chr3. 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)

## Polr3c polymerase (RNA) III (DNA directed) polypeptide C [ *Mus musculus* (house mouse) ]

Gene ID: 74414, updated on 27-Feb-2020

### Summary

Official Symbol	Polr3c provided by <a href="#">MGI</a>
Official Full Name	polymerase (RNA) III (DNA directed) polypeptide C provided by <a href="#">MGI</a>
Primary source	<a href="#">MGI:MGI:1921664</a>
See related	<a href="#">Ensembl:ENSMUSG00000028099</a>
Gene type	protein coding
RefSeq status	PROVISIONAL
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	RPC3; RPC62; 4933407E01Rik
Expression	Ubiquitous expression in large intestine adult (RPKM 19.8), testis adult (RPKM 14.2) and 28 other tissues <a href="#">See more</a>
Orthologs	<a href="#">human</a> <a href="#">all</a>

### Genomic context

Location: 3; 3 F2.1

Exon count: 15

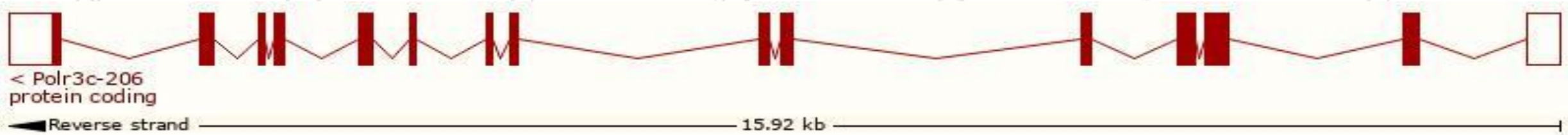
See Polr3c in [Genome Data Viewer](#)

# Transcript information (Ensembl)

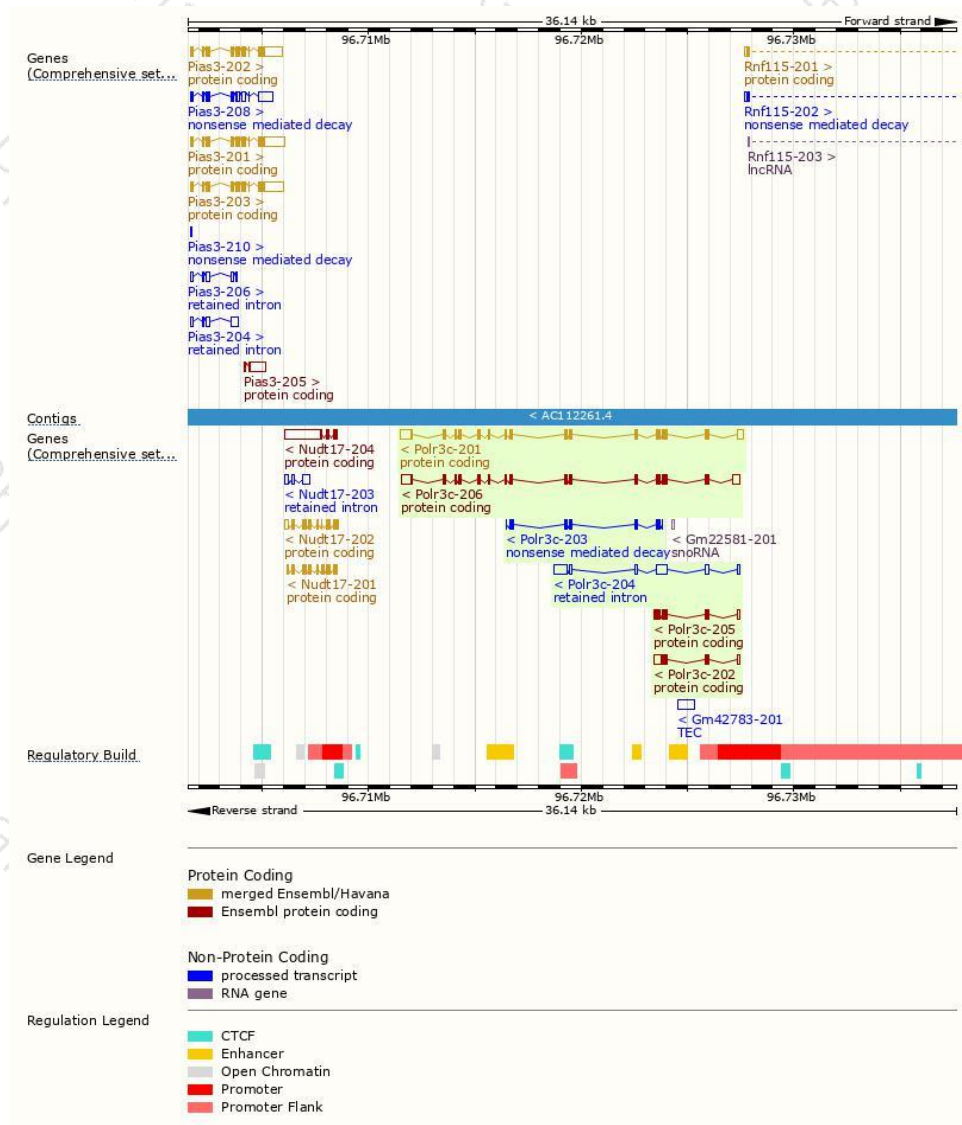
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Polr3c-206	<a href="#">ENSMUST00000154679.7</a>	2406	<a href="#">533aa</a>	Protein coding	<a href="#">CCDS51010</a>	<a href="#">B2RX77 Q9D483</a>	TSL:5 GENCODE basic APPRIS P1
Polr3c-201	<a href="#">ENSMUST00000029741.8</a>	2390	<a href="#">533aa</a>	Protein coding	<a href="#">CCDS51010</a>	<a href="#">B2RX77 Q9D483</a>	TSL:1 GENCODE basic APPRIS P1
Polr3c-202	<a href="#">ENSMUST00000125183.1</a>	923	<a href="#">139aa</a>	Protein coding	-	<a href="#">D3YYS2</a>	TSL:1 GENCODE basic
Polr3c-205	<a href="#">ENSMUST00000141377.7</a>	808	<a href="#">202aa</a>	Protein coding	-	<a href="#">Q9D483</a>	TSL:1 GENCODE basic
Polr3c-203	<a href="#">ENSMUST00000128918.1</a>	662	<a href="#">193aa</a>	Nonsense mediated decay	-	<a href="#">F6QK97</a>	CDS 5' incomplete TSL:3
Polr3c-204	<a href="#">ENSMUST00000137009.1</a>	1628	No protein	Retained intron	-	-	TSL:1

The strategy is based on the design of *Polr3c-206* 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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