

# *Pex7* Cas9-KO Strategy

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**Reviewer:**

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# Project Overview

**Project Name**

*Pex7*

**Project type**

**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pex7* gene. The schematic diagram is as follows:



- The *Pex7* gene has 4 transcripts. According to the structure of *Pex7* gene, exon2-exon3 of *Pex7-201* (ENSMUST00000020182.15) transcript is recommended as the knockout region. The region contains 209bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pex7* gene. The brief process is as follows: CRISPR/Cas9 system v

- According to the existing MGI data, Mice homozygous for mutations in this gene, are petite with cataracts and have delayed ossification and fertility defects. Additionally, mice have biochemical defects in plasmalogen biosynthesis.
- The *Pex7* gene is located on the Chr10. 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)

## Pex7 peroxisomal biogenesis factor 7 [Mus musculus (house mouse)]

Gene ID: 18634, updated on 31-Jan-2019

### Summary



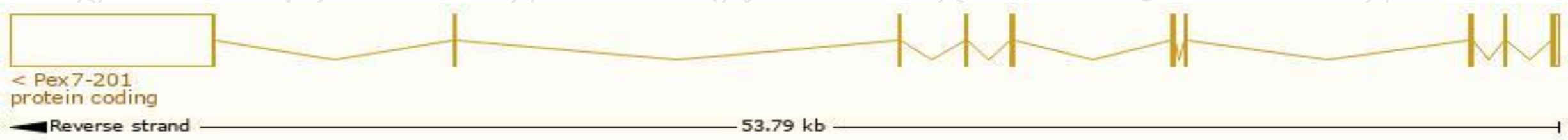
<b>Official Symbol</b>	Pex7 provided by <a href="#">MGI</a>
<b>Official Full Name</b>	peroxisomal biogenesis factor 7 provided by <a href="#">MGI</a>
<b>Primary source</b>	<a href="#">MGI:MGI:1321392</a>
<b>See related</b>	<a href="#">Ensembl:ENSMUSG00000020003</a>
<b>Gene type</b>	protein coding
<b>RefSeq status</b>	VALIDATED
<b>Organism</b>	<a href="#">Mus musculus</a>
<b>Lineage</b>	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
<b>Also known as</b>	MmPEX7
<b>Expression</b>	Ubiquitous expression in adrenal adult (RPKM 57.2), liver adult (RPKM 36.9) and 28 other tissues <a href="#">See more</a>
<b>Orthologs</b>	<a href="#">human</a> <a href="#">all</a>

# Transcript information (Ensembl)

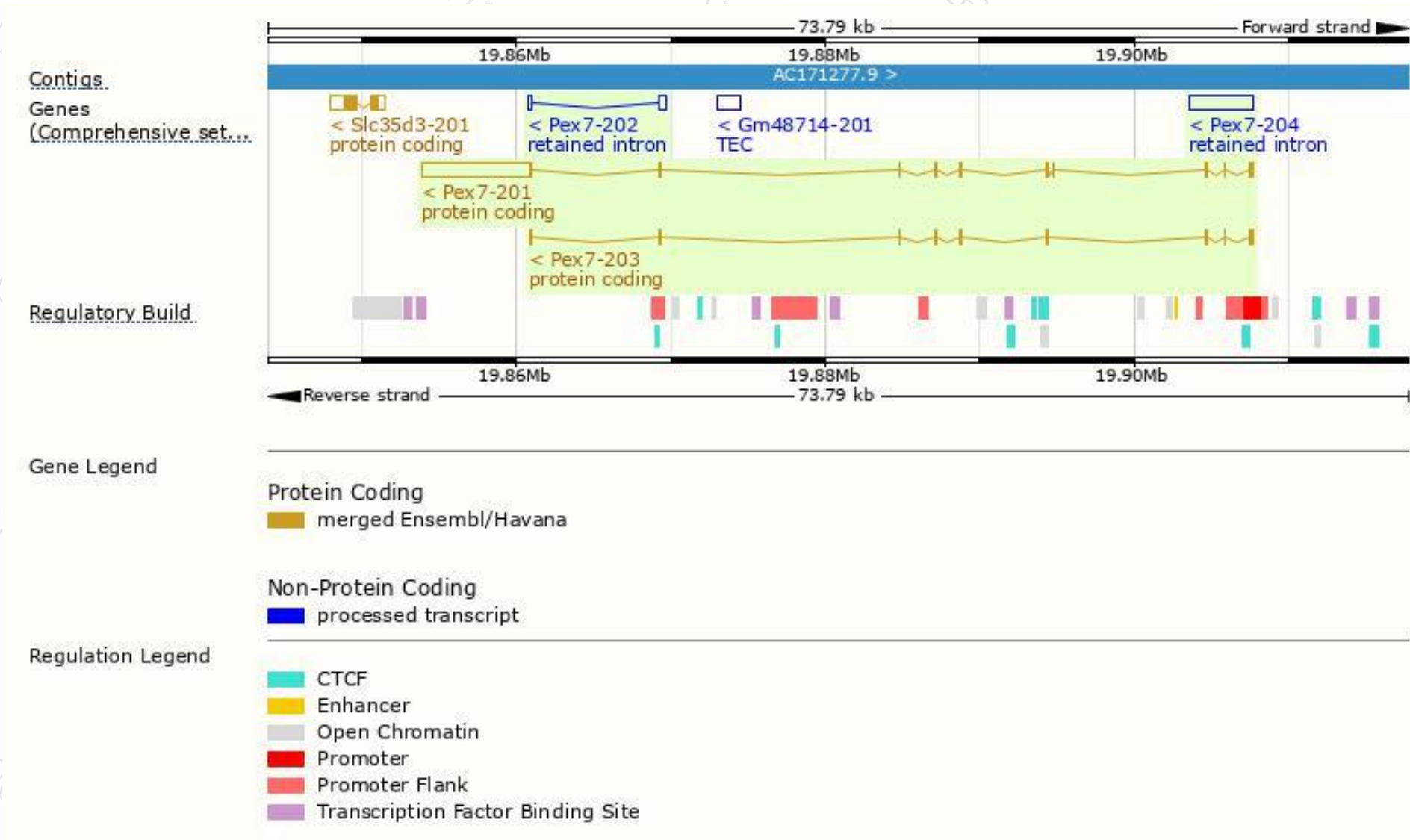
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pex7-201	<a href="#">ENSMUST00000020182.15</a>	8099	<a href="#">318aa</a>	Protein coding	<a href="#">CCDS23720</a>	<a href="#">P97865</a>	TSL:1 GENCODE basic APPRIS P1
Pex7-203	<a href="#">ENSMUST00000166511.8</a>	1047	<a href="#">292aa</a>	Protein coding	<a href="#">CCDS48510</a>	<a href="#">B7ZNK8</a>	TSL:1 GENCODE basic
Pex7-204	<a href="#">ENSMUST00000214951.1</a>	4114	No protein	Retained intron	-	-	TSL:NA
Pex7-202	<a href="#">ENSMUST00000125942.1</a>	587	No protein	Retained intron	-	-	TSL:2

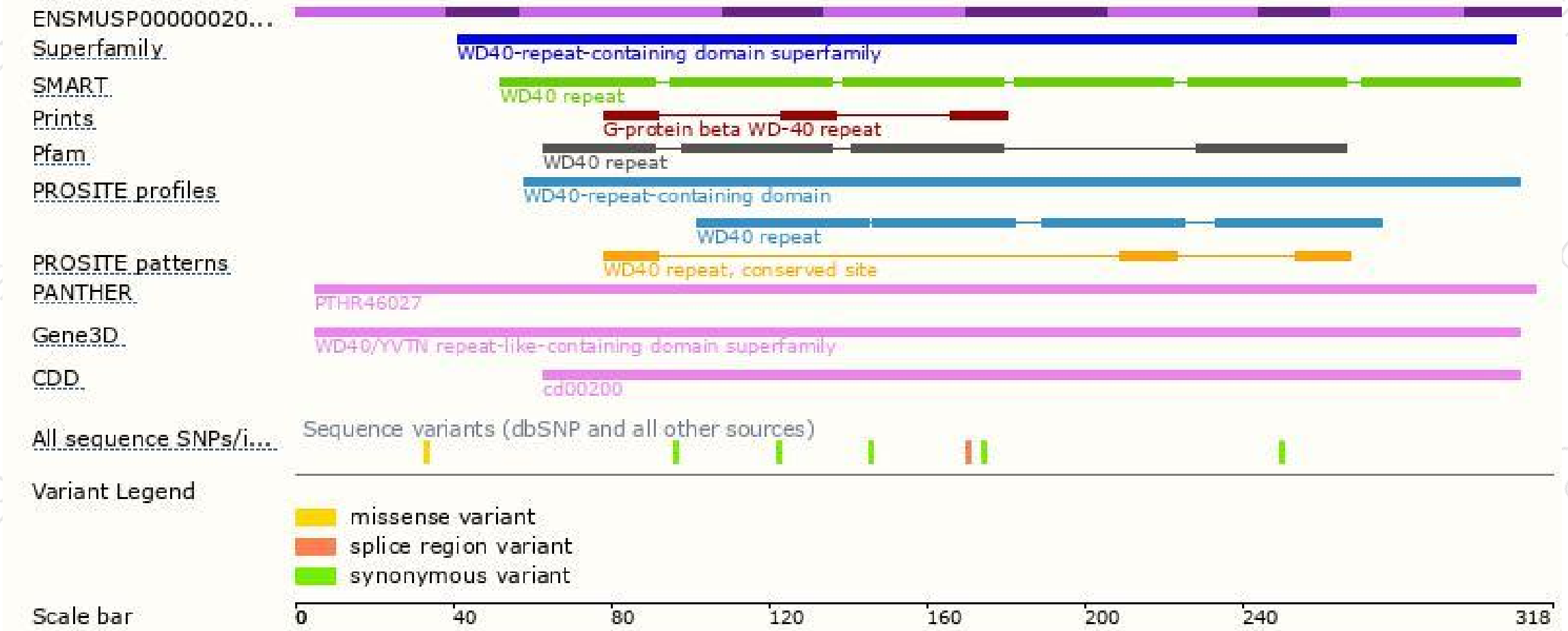
The strategy is based on the design of *Pex7-201* transcript,The transcription is shown below



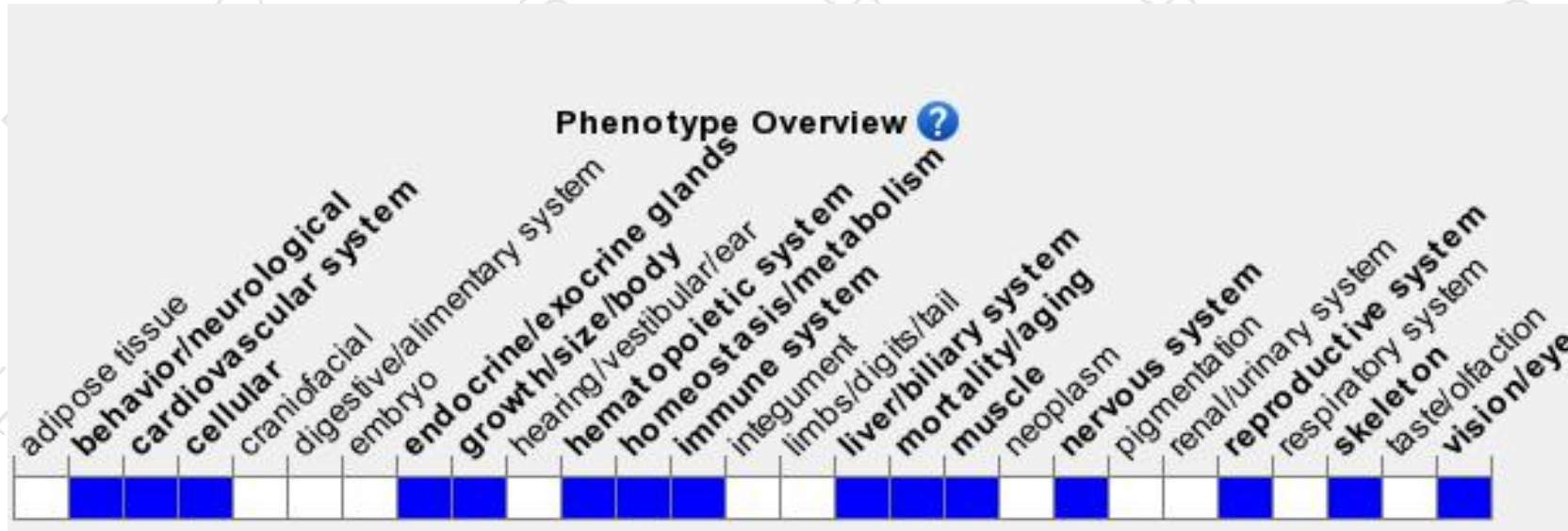
# Genomic location distribution



# Protein domain



# Mouse phenotype description(MGI )



*Phenotypes affected by the gene are marked in blue. Data quoted from MGI database(<http://www.informatics.jax.org/>).*

According to the existing MGI data, Mice homozygous for mutations in this gene, are petite with cataracts and have delayed ossification and fertility defects. Additionally, mice have biochemical defects in plasmalogen biosynthesis.

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

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