

# *Kxd1* Cas9-KO Strategy

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# Project Overview

**Project Name**

***Kxd1***

**Project type**

**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Kxd1* gene. The schematic diagram is as follows:



- The *Kxd1* gene has 9 transcripts. According to the structure of *Kxd1* gene, exon3-exon4 of *Kxd1-201* (ENSMUST00000093456.11) transcript is recommended as the knockout region. The region contains 200bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Kxd1* gene. The brief process is as follows: CRISPR/Cas9 system v

- The knockout region is near to the N-terminal of *Uba52* and *Fkbp8* gene, this strategy may influence the regulatory function of the N-terminal of *Uba52* and *Fkbp8* gene.
- According to the existing MGI data, Mice homozygous for a knock-out allele exhibit reduced melanosomes in the choroid and retinal pigment epithelium and decreased platelet dense granule number.
- The *Kxd1* 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)

## Kxd1 KxDL motif containing 1 [Mus musculus (house mouse)]

Gene ID: 75620, updated on 31-Jan-2019

### Summary



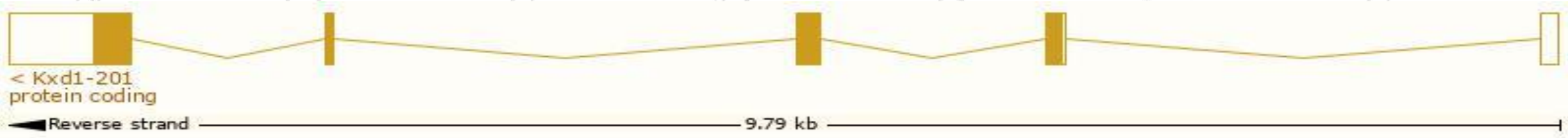
<b>Official Symbol</b>	Kxd1 provided by <a href="#">MGI</a>
<b>Official Full Name</b>	KxDL motif containing 1 provided by <a href="#">MGI</a>
<b>Primary source</b>	<a href="#">MGI:MGI:1922870</a>
<b>See related</b>	<a href="#">Ensembl:ENSMUSG00000055553</a>
<b>Gene type</b>	protein coding
<b>RefSeq status</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>	0610030B01Rik, 2810422J05Rik, C78305
<b>Expression</b>	Ubiquitous expression in kidney adult (RPKM 49.4), heart adult (RPKM 35.3) 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 9 transcripts,all transcripts are shown below:

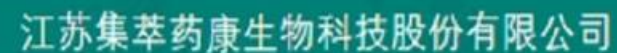
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Kxd1-201	<a href="#">ENSMUST00000093456.11</a>	1216	<a href="#">177aa</a>	Protein coding	<a href="#">CCDS52574</a>	<a href="#">Q80XH1</a>	TSL:1 GENCODE basic
Kxd1-203	<a href="#">ENSMUST00000118850.7</a>	992	<a href="#">219aa</a>	Protein coding	-	<a href="#">G3X9Z9</a>	TSL:2 GENCODE basic
Kxd1-207	<a href="#">ENSMUST00000138260.7</a>	917	<a href="#">193aa</a>	Protein coding	-	<a href="#">E9Q4P0</a>	CDS 3' incomplete TSL:5
Kxd1-204	<a href="#">ENSMUST00000121623.7</a>	884	<a href="#">232aa</a>	Protein coding	-	<a href="#">E9QNP0</a>	TSL:5 GENCODE basic APPRIS P1
Kxd1-202	<a href="#">ENSMUST00000117580.7</a>	696	<a href="#">114aa</a>	Protein coding	-	<a href="#">D3YWA5</a>	TSL:5 GENCODE basic
Kxd1-205	<a href="#">ENSMUST00000132867.1</a>	436	<a href="#">37aa</a>	Protein coding	-	<a href="#">D3YXX6</a>	CDS 3' incomplete TSL:3
Kxd1-206	<a href="#">ENSMUST00000137610.2</a>	424	<a href="#">100aa</a>	Protein coding	-	<a href="#">D3Z2M8</a>	CDS 3' incomplete TSL:5
Kxd1-209	<a href="#">ENSMUST00000155677.7</a>	639	<a href="#">114aa</a>	Nonsense mediated decay	-	<a href="#">D3YWA5</a>	TSL:3
Kxd1-208	<a href="#">ENSMUST00000138586.1</a>	1033	No protein	Retained intron	-	-	TSL:1

The strategy is based on the design of *Kxd1-201* transcript,The transcription is shown below

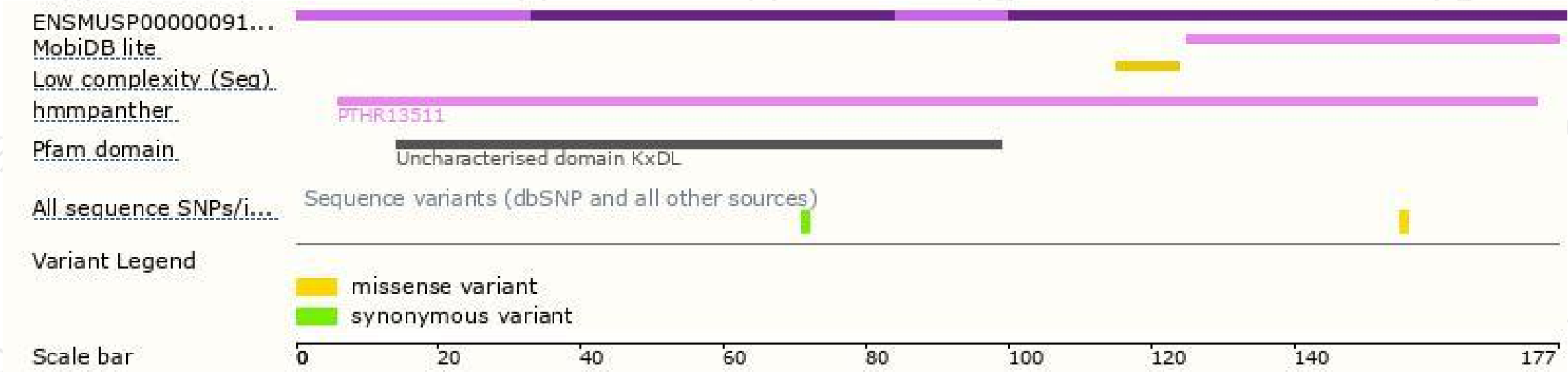




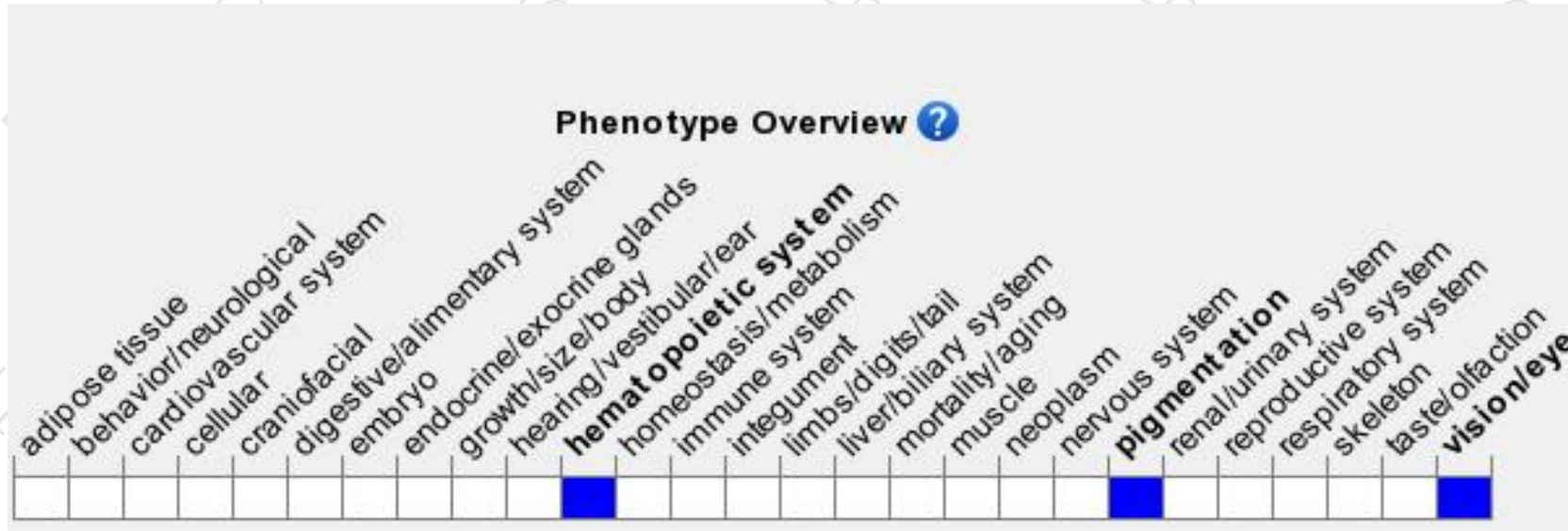
集萃药康  
GemPharmatech



# 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 a knock-out allele exhibit reduced melanosomes in the choroid and retinal pigment epithelium and decreased platelet dense granule number.

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

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