

# *Crim1* Cas9-KO Strategy

**Designer:**

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**Design Date:**

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# Project Overview



**Project Name**

***Crim1***

**Project type**

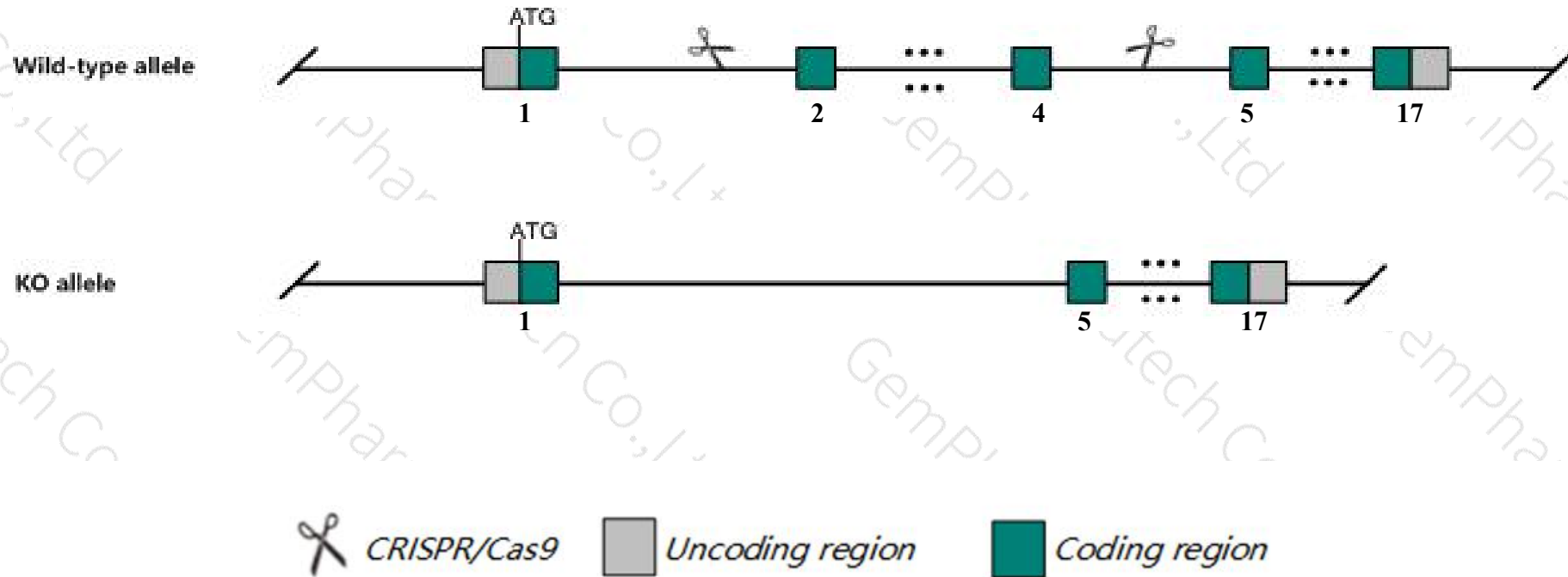
**Cas9-KO**

**Strain background**

**C57BL/6JGpt**

# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Crim1* gene. The schematic diagram is as follows:



- The *Crim1* gene has 6 transcripts. According to the structure of *Crim1* gene, exon2-exon4 of *Crim1-201* (ENSMUST00000112498.2) transcript is recommended as the knockout region. The region contains 538bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Crim1* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mutations in this locus cause perinatal lethality, syndactyly, and eye and kidney abnormalities.
- The *Crim1* gene is located on the Chr17. 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)



## Crim1 cysteine rich transmembrane BMP regulator 1 (chordin like) [Mus musculus (house mouse)]

Gene ID: 50766, updated on 31-Jan-2019

### Summary



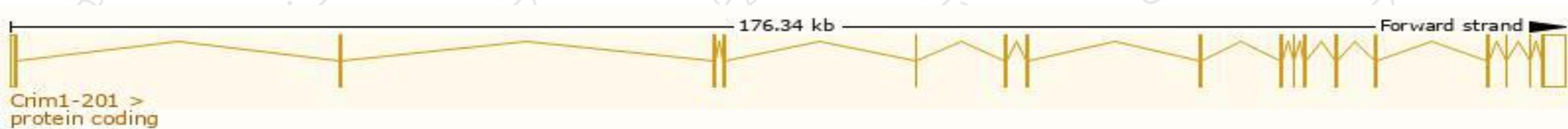
<b>Official Symbol</b>	Crim1 provided by <a href="#">MGI</a>
<b>Official Full Name</b>	cysteine rich transmembrane BMP regulator 1 (chordin like) provided by <a href="#">MGI</a>
<b>Primary source</b>	<a href="#">MGI:MGI:1354756</a>
<b>See related</b>	<a href="#">Ensembl:ENSMUSG00000024074</a>
<b>Gene 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>	AU015004
<b>Expression</b>	Ubiquitous expression in lung adult (RPKM 22.3), ovary adult (RPKM 19.7) and 24 other tissues <a href="#">See more</a>
<b>Orthologs</b>	<a href="#">human</a> <a href="#">all</a>

# Transcript information (Ensembl)

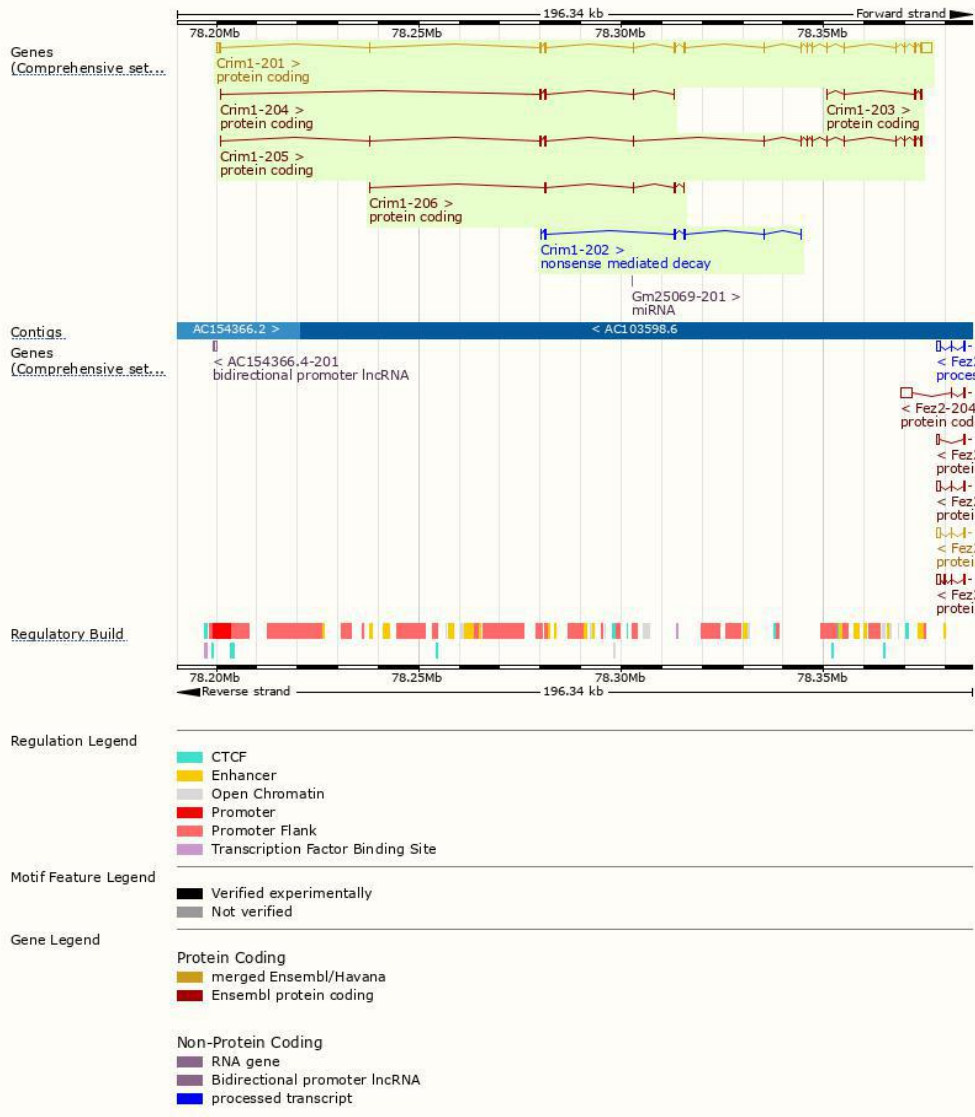
The gene has 6 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Crim1-201	<a href="#">ENSMUST00000112498.2</a>	5995	<a href="#">1037aa</a>	Protein coding	<a href="#">CCDS28976</a>	<a href="#">Q9JLL0</a>	TSL:1 GENCODE basic APPRIS P1
Crim1-205	<a href="#">ENSMUST00000234700.1</a>	2487	<a href="#">812aa</a>	Protein coding	-	-	CDS 5' incomplete
Crim1-204	<a href="#">ENSMUST00000234546.1</a>	732	<a href="#">244aa</a>	Protein coding	-	-	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete
Crim1-206	<a href="#">ENSMUST00000234964.1</a>	632	<a href="#">211aa</a>	Protein coding	-	-	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete
Crim1-203	<a href="#">ENSMUST00000234439.1</a>	547	<a href="#">183aa</a>	Protein coding	-	-	5' and 3' truncations in transcript evidence prevent annotation of the start and the end of the CDS. CDS 5' and 3' incomplete
Crim1-202	<a href="#">ENSMUST00000234059.1</a>	821	<a href="#">103aa</a>	Nonsense mediated decay	-	-	CDS 5' incomplete

The strategy is based on the design of *Crim1-201* transcript, The transcription is shown below

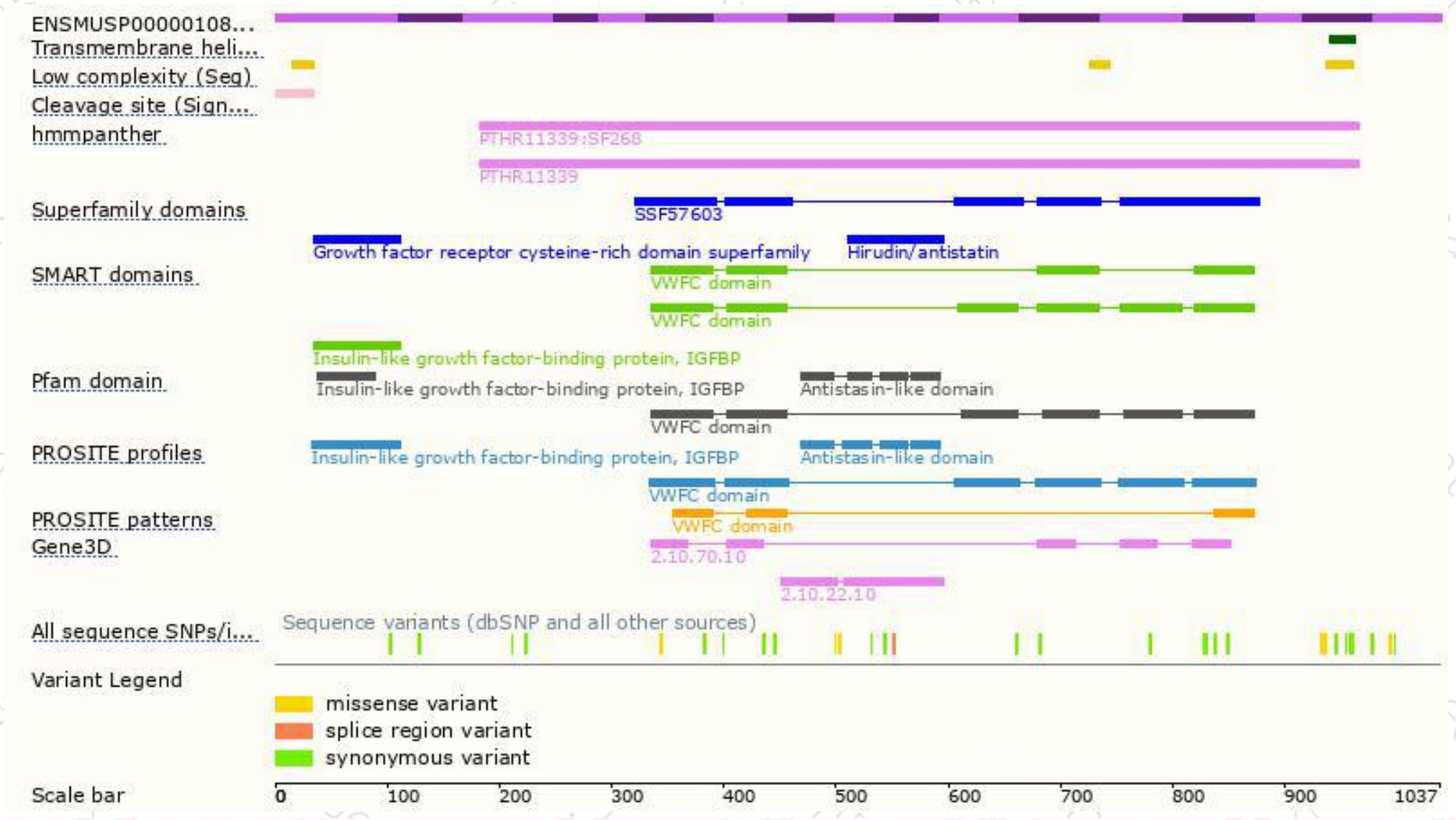


# Genomic location distribution





# 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, Mutations in this locus cause perinatal lethality, syndactyly, and eye and kidney abnormalities.

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

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