# Jaml Cas9-KO Strategy mate ch Co-stat Renphamatech Coste

**Designer:** Comphanated C. L.

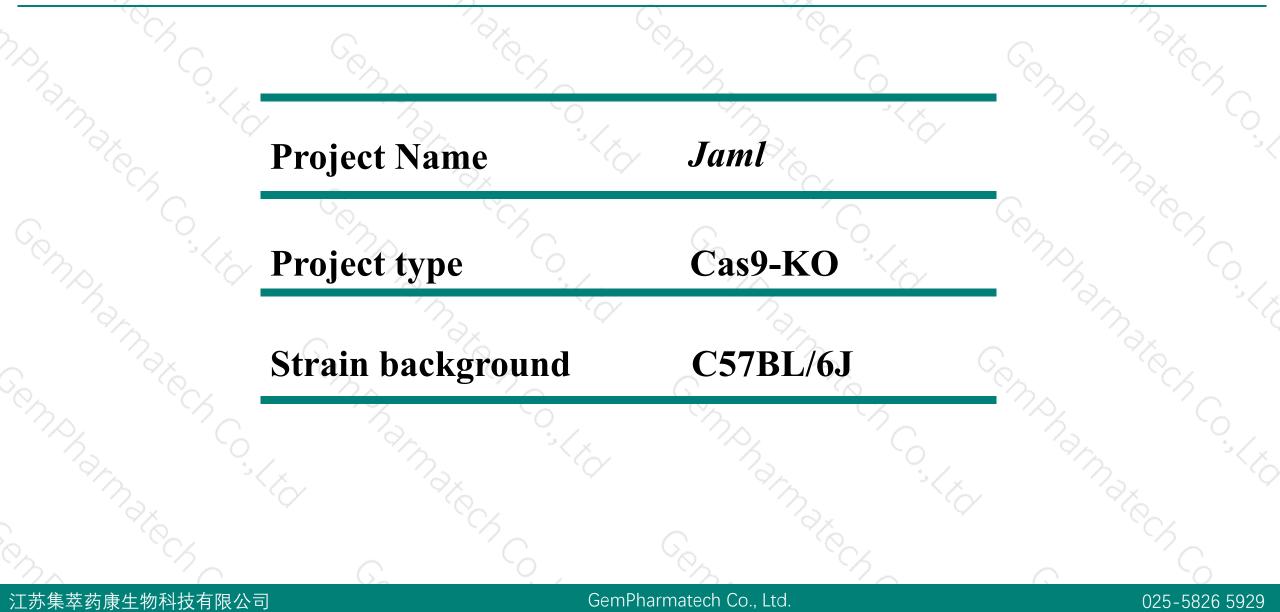
Daohua Xu 

Cempharmatery

Gemphaman

## **Project Overview**



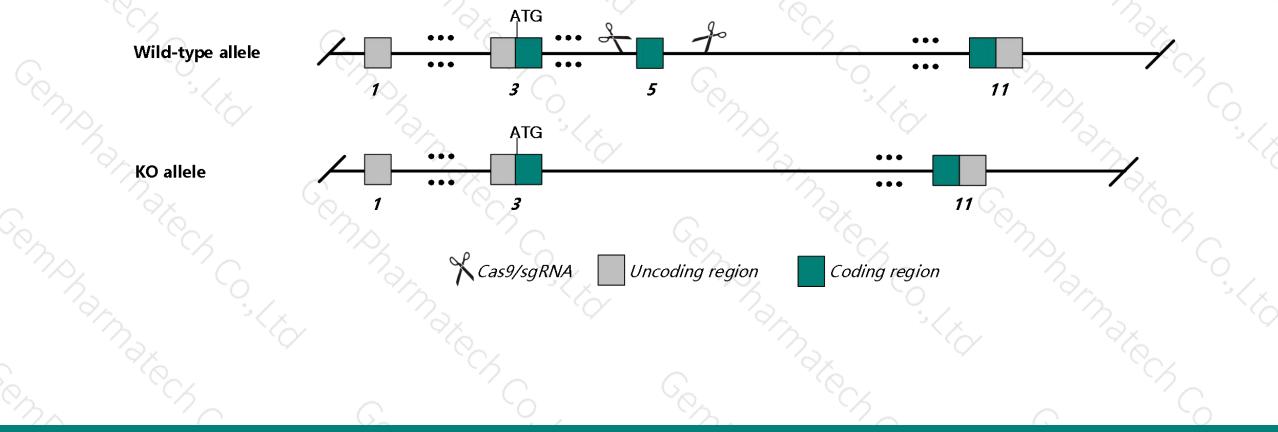


## **Knockout strategy**



025-5826 5929

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



#### 江苏集萃药康生物科技有限公司



- The *Jaml* gene has 7 transcripts. According to the structure of *Jaml* gene, exon5 of *Jaml*-201
  (ENSMUST00000050020.7) transcript is recommended as the knockout region. The region contains 226bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Jaml* gene. The brief process is as follows: sgRNA was transcribed in vitro.Cas9 and sgRNA were microinjected into the fertilized eggs of C57BL/6J mice.Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6J mice.



- ➤ Transcript *Jaml-207* may not be affected.
- The Jaml gene is located on the Chr9. 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, RNA splicing and protein translation cannot be predicted at the existing technology level.

Notice

## **Gene information**



☆ ?

#### Jaml junction adhesion molecule like [ Mus musculus (house mouse) ]

Gene ID: 270152, updated on 31-Jan-2019

#### - Summary

Official SymbolJaml provided by MGIOfficial Full Namejunction adhesion molecule like provided by MGIPrimary soureMGI:MGI:2685484See relateEnsembl:ENSMUSG0000048534Gene typeprotein codingRefSeq statusVALIDATEDOrganismMus musculusLineageEukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha;<br/>Muroidea; Murinae; Mus; MusAlso known asAMICA; Crea7; GmG38; Amica1ExpressionLow expression observed in reference dataset See more<br/>Muma all

(NCBI)

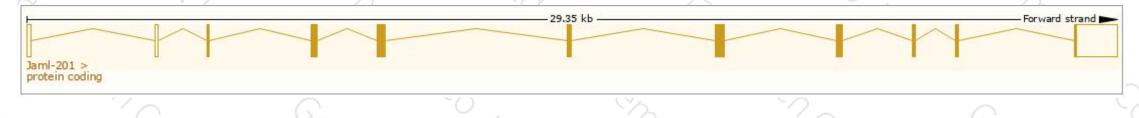
## **Transcript information (Ensembl)**



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

| Name 🖕   | Transcript ID        | bp 🖕             | Protein 🖕    | Biotype 💧       | CCDS 🖕             | UniProt 💧           |       | Flags             |           |
|----------|----------------------|------------------|--------------|-----------------|--------------------|---------------------|-------|-------------------|-----------|
| Jami-201 | ENSMUST00000050020.7 | 2461             | <u>379aa</u> | Protein coding  | <u>CCDS23128</u> 율 | <u> </u>            | TSL:1 | GENCODE basic     | APPRIS P1 |
| Jaml-204 | ENSMUST00000215880.1 | 1704             | <u>379aa</u> | Protein coding  | CCDS23128          | <u>Q80UL9</u> മ     | TSL:1 | GENCODE basic     | APPRIS P1 |
| Jaml-206 | ENSMUST00000216426.1 | 652              | <u>167aa</u> | Protein coding  | -                  | <u>A0A1L1STQ5</u> @ | 1     | CDS 3' incomplete | TSL:3     |
| Jaml-207 | ENSMUST00000217074.1 | 589              | <u>113aa</u> | Protein coding  | -                  | <u>A0A1L1SSJ0</u> 团 | 1     | CDS 5' incomplete | TSL:3     |
| Jaml-202 | ENSMUST00000215098.1 | 489              | No protein   | Retained intron | -                  | -                   |       | TSL:2             |           |
| Jaml-203 | ENSMUST00000215266.1 | <mark>477</mark> | No protein   | Retained intron | -                  | -                   |       | TSL:2             |           |
| Jaml-205 | ENSMUST00000216333.1 | 427              | No protein   | IncRNA          | -                  | -                   |       | TSL:5             |           |

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

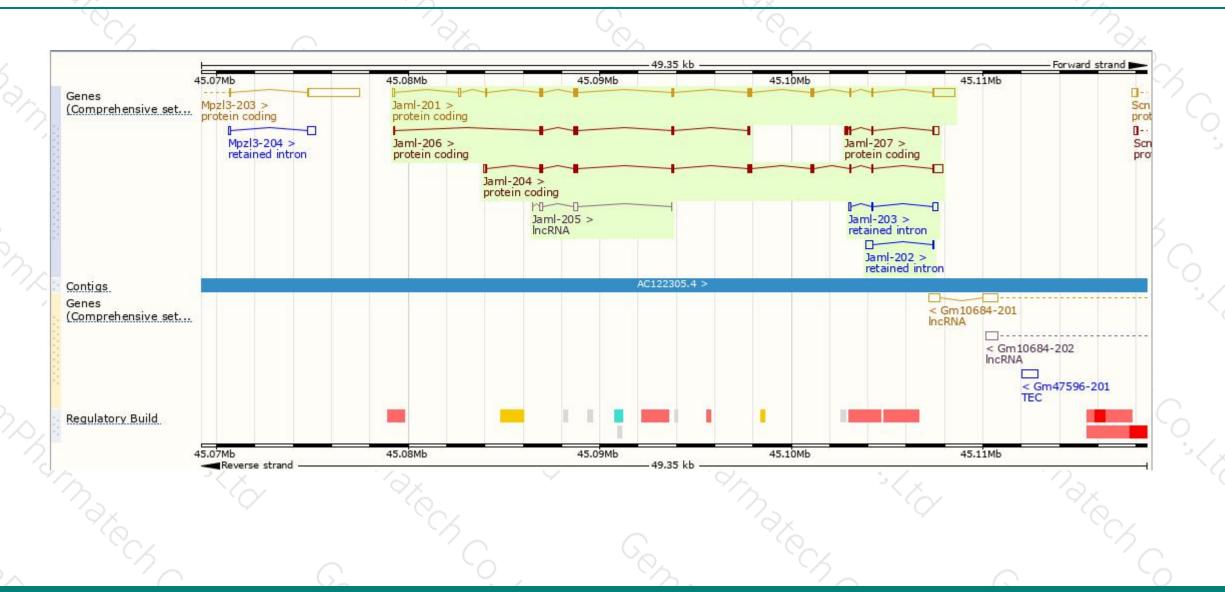


#### 江苏集萃药康生物科技有限公司

### **集萃药康** GemPharmatech

025-5826 5929

## **Genomic location distribution**



#### 江苏集萃药康生物科技有限公司

GemPharmatech Co., Ltd.

## **Protein domain**



|                   | (                                     |                           |   |   |       |     |         |                           |     |            |            |     |
|-------------------|---------------------------------------|---------------------------|---|---|-------|-----|---------|---------------------------|-----|------------|------------|-----|
| Dr.               | ENSMUSP0000052<br>Transmembrane heli  |                           |   |   |       |     |         |                           |     | -          |            |     |
| $\sim 2$          | SIFTS import<br>Low complexity (Seg)  |                           |   |   |       |     |         |                           | _   | -          |            |     |
|                   | Cleavage site (Sign                   |                           |   |   |       |     |         |                           |     |            |            |     |
|                   | Superfamily<br>SMART                  | Im                        |   | -like domain supe   |       |     |         |                           |     |            |            |     |
|                   | HIMAN.                                | -                         |   | oulin V-set domain  | n     | _   |         | _                         |     |            |            |     |
|                   | 1                                     |                           | munoglobulin s  |   |       | _   |         | _                         |     |            |            |     |
|                   | Pfam.                                 |                           | Immunoglobu<br>munoglobulin \                             |   |       |     |         |                           |     |            |            | 5   |
|                   | PROSITE profiles                      |                           | noglobulin-like   | and the second se |       | -   |         |                           |     |            |            | 10  |
|                   | PANTHER                               | Myelin P0 protein-        | related   |   |       |     |         |                           |     |            |            |     |
|                   |                                       |                           |   |   |       |     |         |                           |     |            |            | -   |
|                   | C                                     | Junctional adhesio        |   |   |       |     |         |                           |     |            |            | •   |
|                   | Gene3D                                | Immuno                    | globulin-like fo  | old   |       |     |         | -                         |     |            |            | •   |
|                   | Gene3D<br>All sequence SNPs/i         |                           | globulin-like fo  | old   | rces) |     | T.      |                           |     | no a       | <u>.</u>   |     |
|                   | The second second second second       | Immuno                    | globulin-like fo  | old   | rces) |     |         | 11.0                      | p)  | 00.0       | i.         |     |
|                   | The second second second second       | Immuno<br>Sequence variar | globulin-like fi<br>nts (dbSNP a                          | old   | rces) |     | Ţ.      | 10101003                  | p.  | (m) (i     | i.         |     |
|                   | All sequence SNPs/i                   | Immuno                    | globulin-like fi<br>nts (dbSNP a<br>variant               | old   | rces) |     |         | e variant<br>nous variant | p.  | 00.0       | 1          |     |
| 702               | All sequence SNPs/i                   | Immuno<br>Sequence variar | globulin-like fi<br>nts (dbSNP a<br>variant               | old   | rces) | 160 |         | e variant                 | 280 | <b>111</b> | 3          | 379 |
| 10.<br>10.<br>10. | All sequence SNPs/i<br>Variant Legend | Immuno<br>Sequence variar | globulin-like fo<br>nts (dbSNP a<br>variant<br>on variant | old<br>nd all other sour  |       | 160 | synonyn | e variant<br>nous variant | •   |            | 3          | 379 |
| non de            | All sequence SNPs/i<br>Variant Legend | Immuno<br>Sequence variar | globulin-like fo<br>nts (dbSNP a<br>variant<br>on variant | old<br>nd all other sour  |       | 160 | synonyn | e variant<br>nous variant | •   |            | 3<br>7     | 379 |
|                   | All sequence SNPs/i<br>Variant Legend | Immuno<br>Sequence variar | globulin-like fo<br>nts (dbSNP a<br>variant<br>on variant | old<br>nd all other sour  |       | 160 | synonyn | e variant<br>nous variant | •   |            | a constant | 379 |
| non of            | All sequence SNPs/i<br>Variant Legend | Immuno<br>Sequence variar | globulin-like fo<br>nts (dbSNP a<br>variant<br>on variant | old<br>nd all other sour  |       | 160 | synonyn | e variant<br>nous variant | •   |            | are of     | 379 |
| 10 m              | All sequence SNPs/i<br>Variant Legend | Immuno<br>Sequence variar | globulin-like fo<br>nts (dbSNP a<br>variant<br>on variant | old<br>nd all other sour  |       | 160 | synonyn | e variant<br>nous variant | •   |            | a terrest  | 379 |
| 70%               | All sequence SNPs/i<br>Variant Legend | Immuno<br>Sequence variar | globulin-like fo<br>nts (dbSNP a<br>variant<br>on variant | old<br>nd all other sour  |       | 160 | synonyn | e variant<br>nous variant | •   |            | ater 4     | 379 |

#### 江苏集萃药康生物科技有限公司

GemPharmatech Co., Ltd.

#### 025-5826 5929

If you have any questions, you are welcome to inquire. Tel: 025-5864 1534



