

# *Card6* Cas9-KO Strategy

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# Project Overview

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**Project Name**

***Card6***

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**Project type**

**Cas9-KO**

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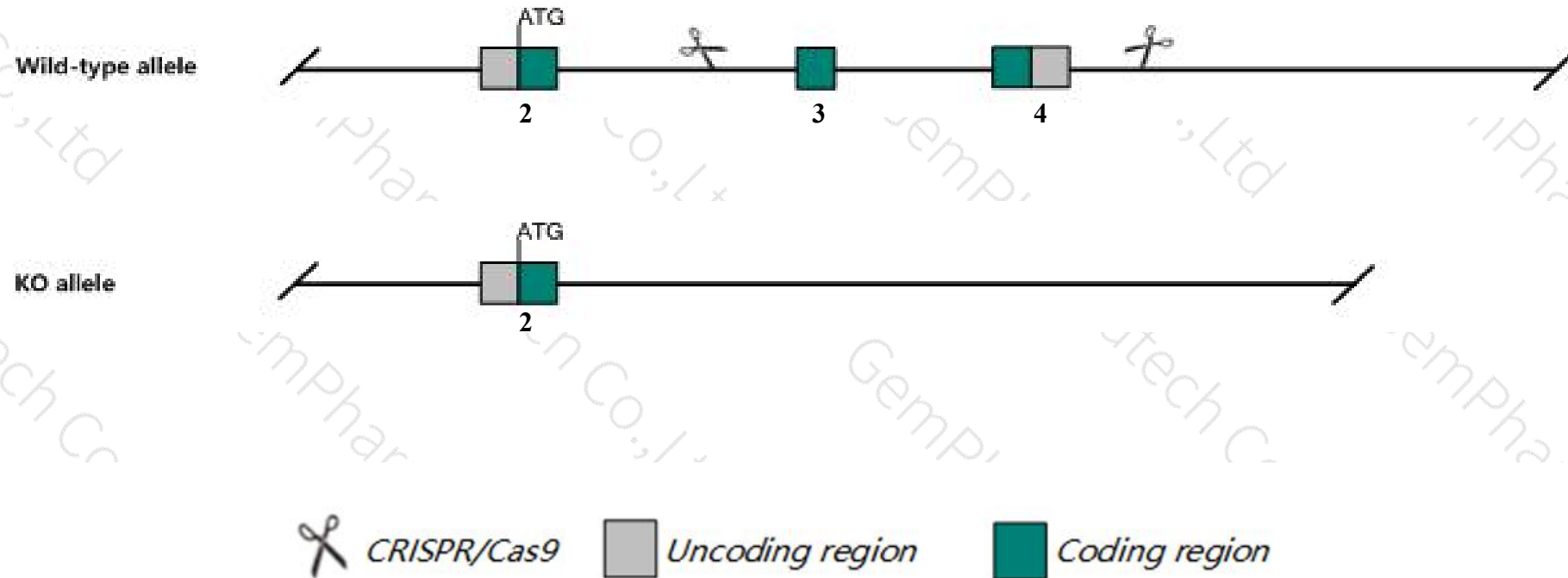
**Strain background**

**C57BL/6JGpt**

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# Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Card6* gene. The schematic diagram is as follows:



- The *Card6* gene has 2 transcripts. According to the structure of *Card6* gene, exon3-exon4 of *Card6-201* (ENSMUST00000118365.2) transcript is recommended as the knockout region. The region contains 3245bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Card6* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Knockout mice are viable and grossly normal with no deficits in thymocytes, granulocytes, macrophages, NK cells or T- and B-cell subsets. Various signaling pathways mediating innate and adaptive immune responses appear unaltered. Mice are normally resistant to infection by a wide range of pathogens.
- The *Card6* gene is located on the Chr15. 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)

## Card6 caspase recruitment domain family, member 6 [Mus musculus (house mouse)]

Gene ID: 239319, updated on 25-Mar-2019

### Summary



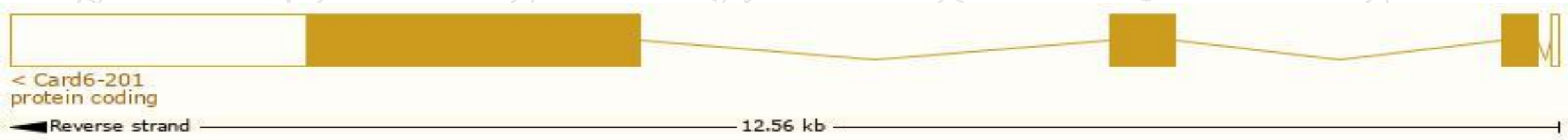
|                           |   |
|---------------------------|---|
| <b>Official Symbol</b>    | Card6 provided by <a href="#">MGI</a>   |
| <b>Official Full Name</b> | caspase recruitment domain family, member 6 provided by <a href="#">MGI</a>   |
| <b>Primary source</b>     | <a href="#">MGI:MGI:3032959</a>   |
| <b>See related</b>        | <a href="#">Ensembl:ENSMUSG00000041849</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>      | D730008L15  |
| <b>Expression</b>         | Ubiquitous expression in spleen adult (RPKM 1.0), testis adult (RPKM 0.6) and 27 other tissues <a href="#">See more</a>   |
| <b>Orthologs</b>          | <a href="#">human</a> <a href="#">all</a>   |

# Transcript information (Ensembl)

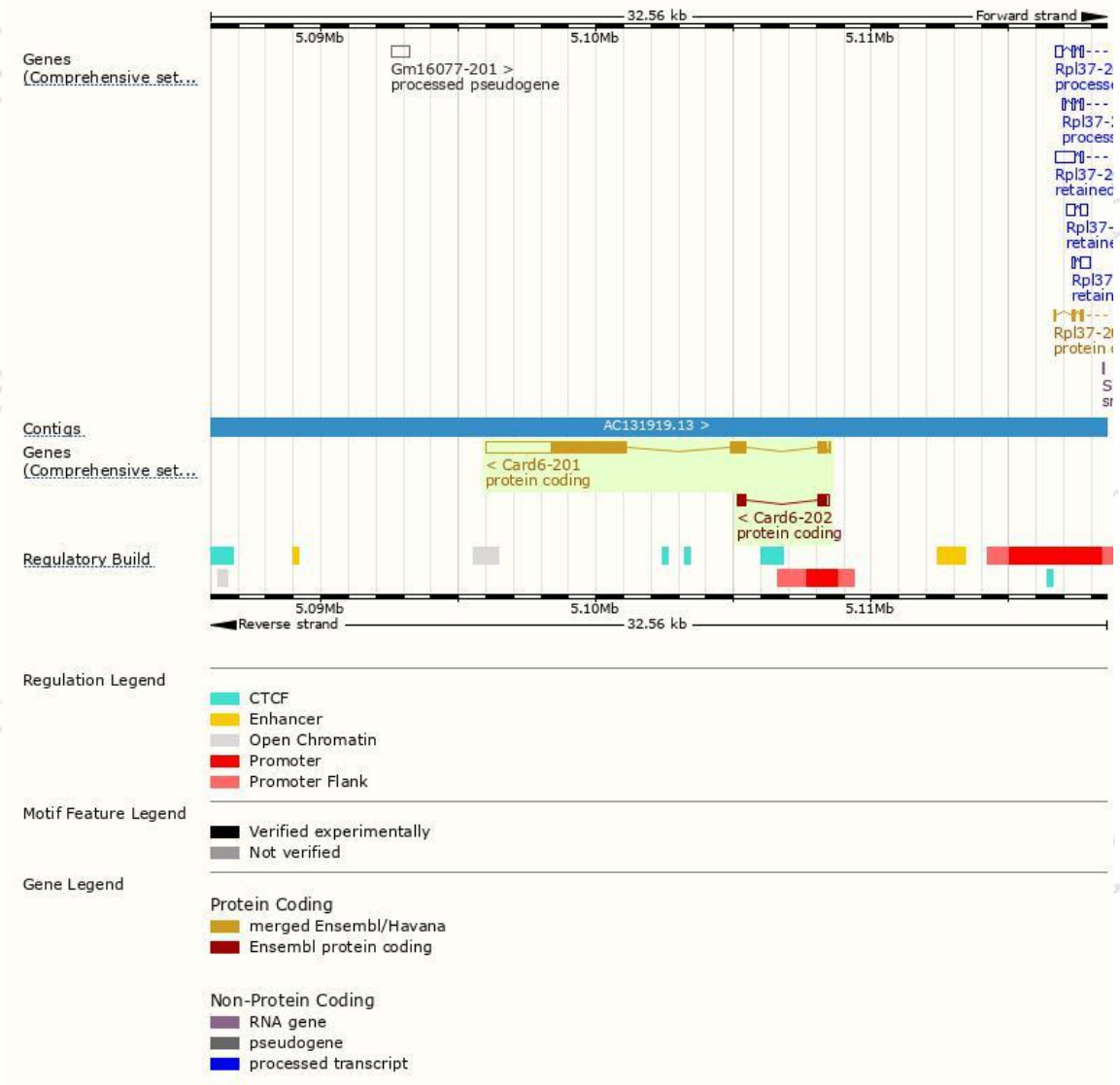
The gene has 2 transcripts,all transcripts are shown below:

| Name      | Transcript ID                        | bp   | Protein                | Biotype        | CCDS                      | UniProt                | Flags                         |
|-----------|--------------------------------------|------|------------------------|----------------|---------------------------|------------------------|-------------------------------|
| Card6-201 | <a href="#">ENSMUST00000118365.2</a> | 5995 | <a href="#">1175aa</a> | Protein coding | <a href="#">CCDS49573</a> | <a href="#">E9PWH2</a> | TSL:5 GENCODE basic APPRIS P1 |
| Card6-202 | <a href="#">ENSMUST00000141020.1</a> | 697  | <a href="#">194aa</a>  | Protein coding | -                         | <a href="#">D3YYK3</a> | CDS 3' incomplete TSL:2       |

The strategy is based on the design of *Card6-201* transcript,The transcription is shown below

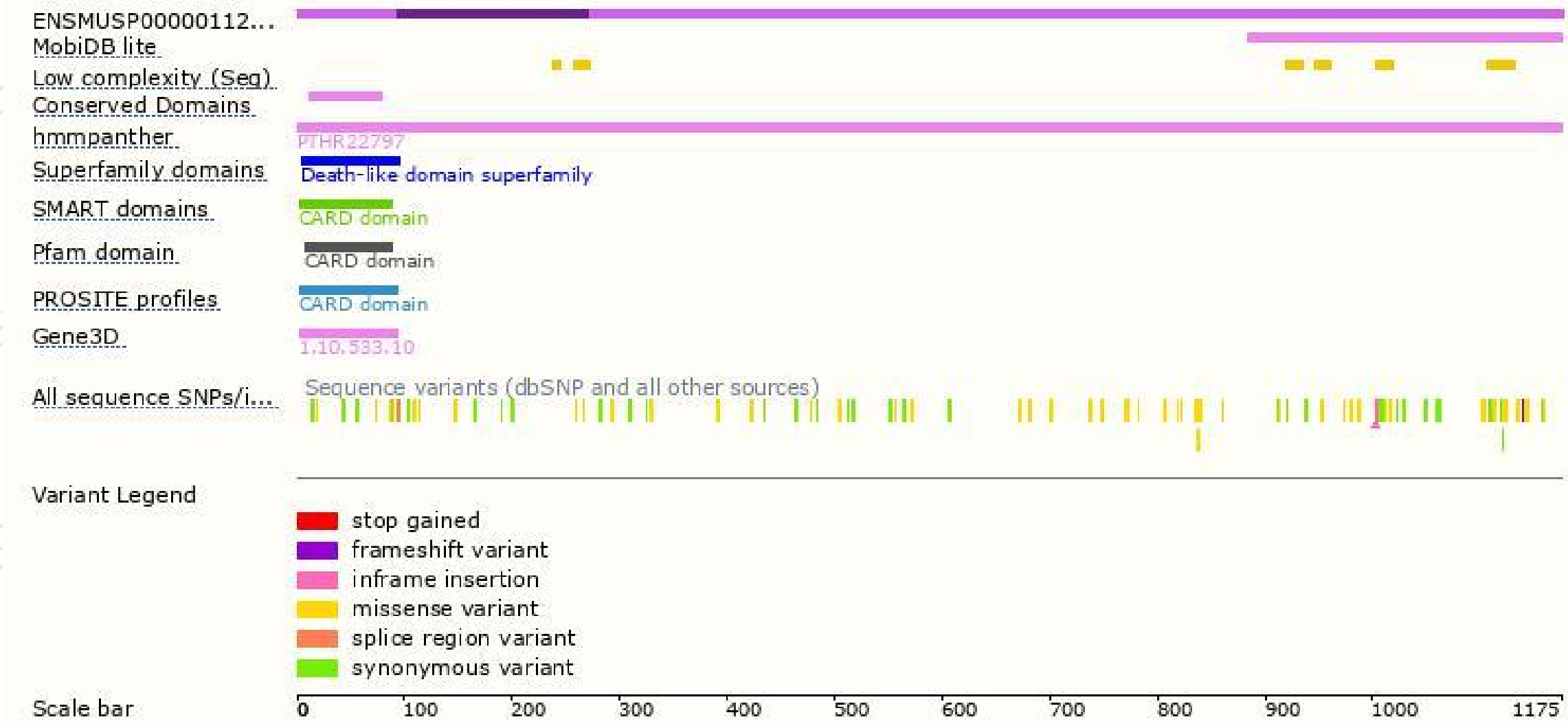


# Genomic location distribution





# Protein domain



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

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