

Cd160 Cas9-KO Strategy

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Reviewer:

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Project Overview



Project Name

Cd160

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Cd160* gene. The schematic diagram is as follows:



- The *Cd160* gene has 3 transcripts. According to the structure of *Cd160* gene, exon2-exon5 of *Cd160-202* (ENSMUST00000107074.7) transcript is recommended as the knockout region. The region contains all of the coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Cd160* gene. The brief process is as follows: CRISPR/Cas9 system

- According to the existing MGI data, Mice homozygous for a knock-out allele show decreased interferon-gamma secretion by NK cells and increased tumor growth/size following inoculation with NK-dependent B16 tumor cells.
- The *Cd160* gene is located on the Chr3. 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)

Cd160 CD160 antigen [Mus musculus (house mouse)]

Gene ID: 54215, updated on 3-Feb-2019

Summary

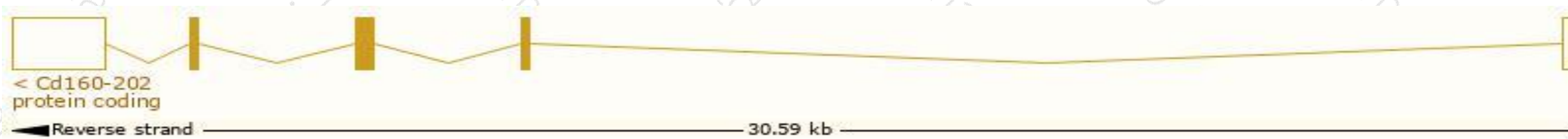
Official Symbol	Cd160 provided by MGI
Official Full Name	CD160 antigen provided by MGI
Primary source	MGI:MGI:1860383
See related	Ensembl:ENSMUSG00000038304
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AU045688, By55
Expression	Low expression observed in reference dataset See more
Orthologs	human all

Transcript information (Ensembl)

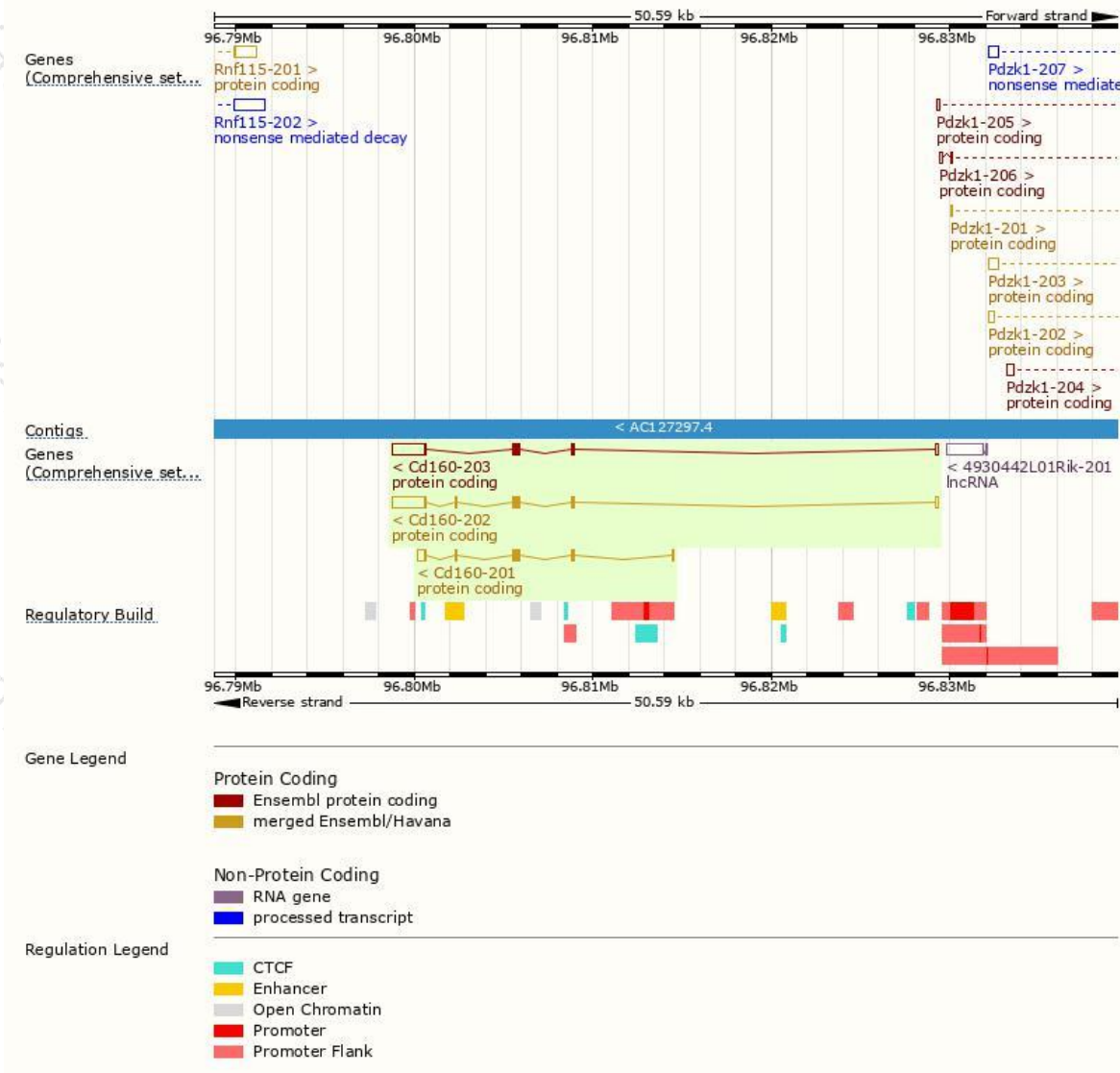
The gene has 3 transcripts, all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Cd160-202	ENSMUST00000107074.7	2590	185aa	Protein coding	CCDS17648	O88875	TSL:1 GENCODE basic APPRIS P3
Cd160-203	ENSMUST00000165991.7	2458	141aa	Protein coding	CCDS51011	E9Q0X3	TSL:3 GENCODE basic APPRIS ALT2
Cd160-201	ENSMUST00000047702.7	1121	185aa	Protein coding	CCDS17648	O88875	TSL:1 GENCODE basic APPRIS P3

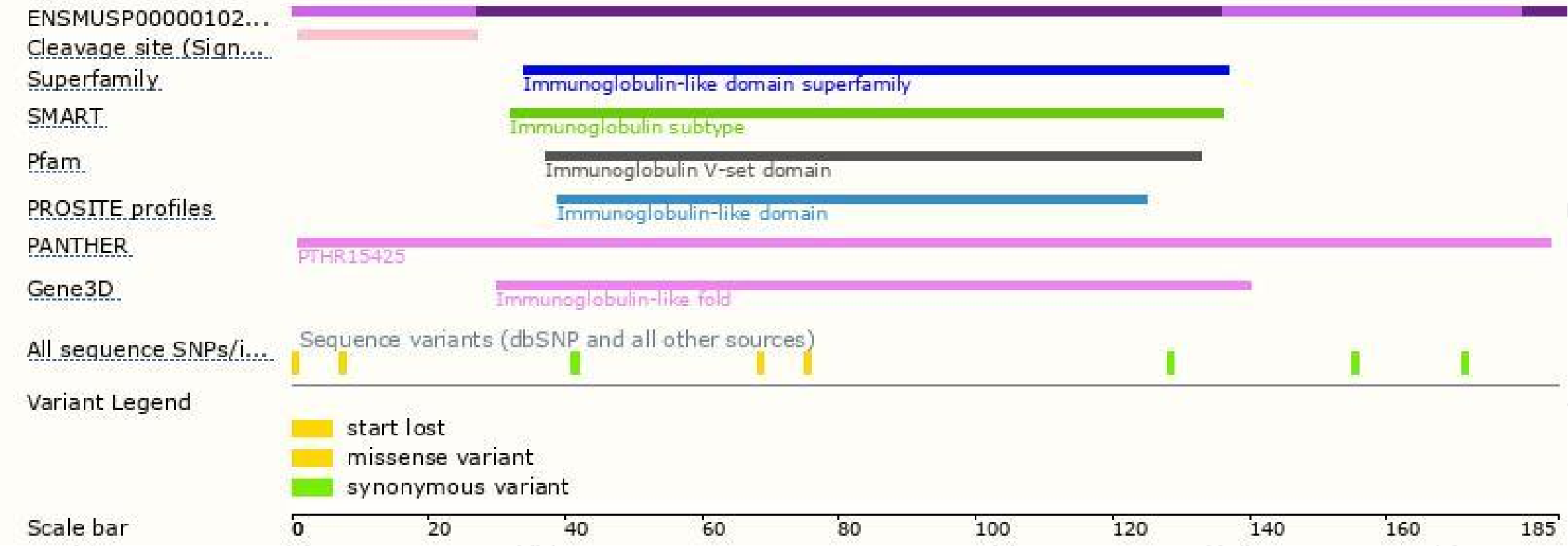
The strategy is based on the design of *Cd160-202* transcript, The transcription is shown below



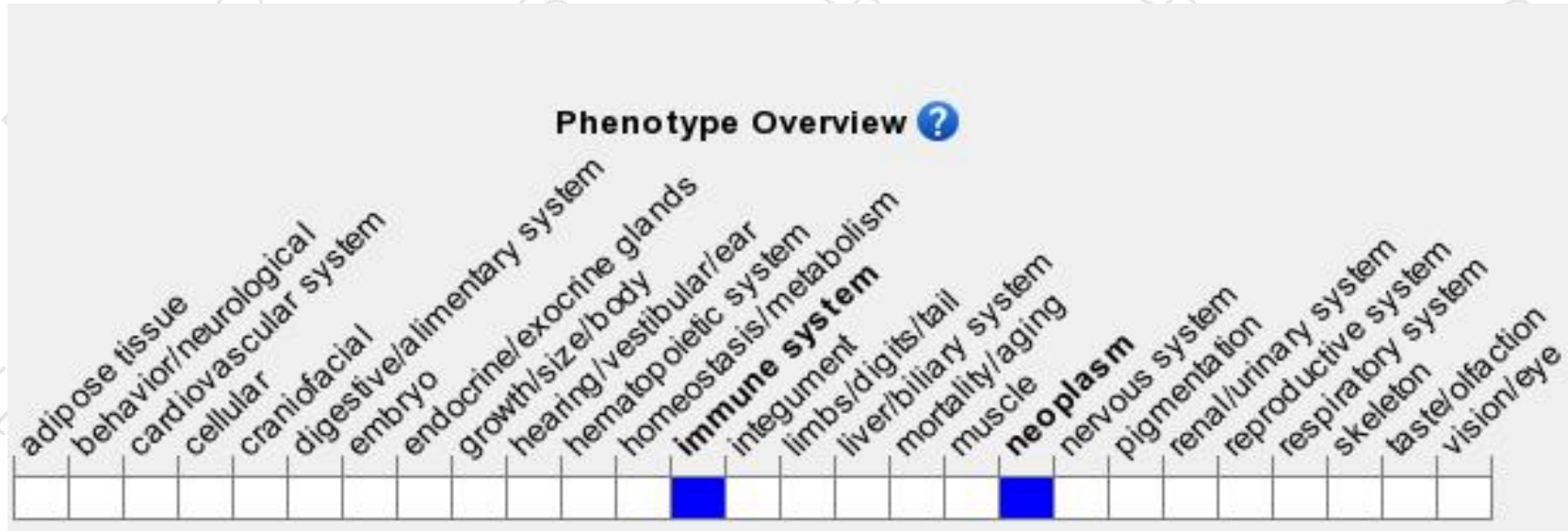
Genomic location distribution



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 a knock-out allele show decreased interferon-gamma secretion by NK cells and increased tumor growth/size following inoculation with NK-dependent B16 tumor cells.

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

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