Senp5 Cas9-KO Strategy

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Project Overview

Project Name	*Senp5*
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Senp5* gene. The schematic diagram is as follows:

Technical routes

➢ The *Senp5* gene has 5 transcripts. According to the structure of *Senp5* gene, exon3-exon5 of *Senp5-201* (ENSMUST00000023457.12) transcript is recommended as the knockout region.The region contains 293bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Senp5* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

➢ The *Senp5* gene is located on the Chr16. 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）

Senp5 SUMO/sentrin specific peptidase 5 [Mus musculus (house mouse)]

Gene ID: 320213, updated on 19-Mar-2019

Summary

|	
Official Symbol	Senp5 provided by MGI
Official Full Name	SUMO/sentrin specific peptidase 5 provided by MGI
Primary source	MGI:MGI:2443596
See related	Ensembl:ENSMUSG00000022772
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	6230429P13Rik, A730063F07Rik, AI851888, BB189556, SMT3IP3
Expression	Ubiquitous expression in placenta adult (RPKM 6.7), CNS E11.5 (RPKM 4.9) and 28 other tissuesSee more
Orthologs	human all

Transcript information（Ensembl）

The gene has 5 transcripts,all transcripts are shown below:

| Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Senp5-205	ENSMUST00000231360.1	6332	749aa	Protein coding	CCDS28111	Q6NXL6	GENCODE basic APPRIS P1
Senp5-201	ENSMUST0000023457.12	3370	749aa	Protein coding	CCDS28111	Q6NXL6	TSL:1 GENCODE basic APPRIS P1
Senp5-202	ENSMUST00000129900.1	1993	607aa	Protein coding	-	F6S6C3	CDS 5' incomplete TSL:1
Senp5-204	ENSMUST00000155515.7	983	210aa	Nonsense mediated decay	-	F7A4L2	CDS 5' incomplete TSL:3
Senp5-203	ENSMUST00000144320.1	2804	No protein	Retained intron	-	-	TSL:1

The strategy is based on the design of *Senp5-201* transcript,The transcription is shown below

< Senp5-201
protein coding

◀━ Reverse strand — 40.66 kb —
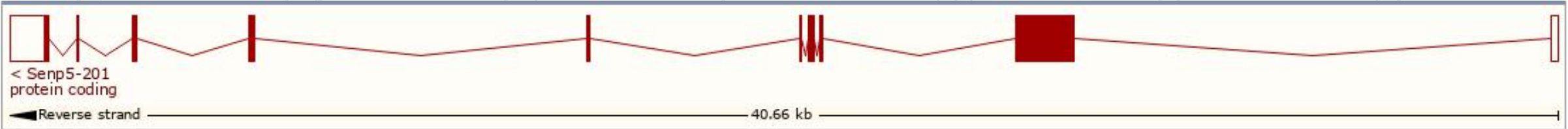
Genomic location distribution
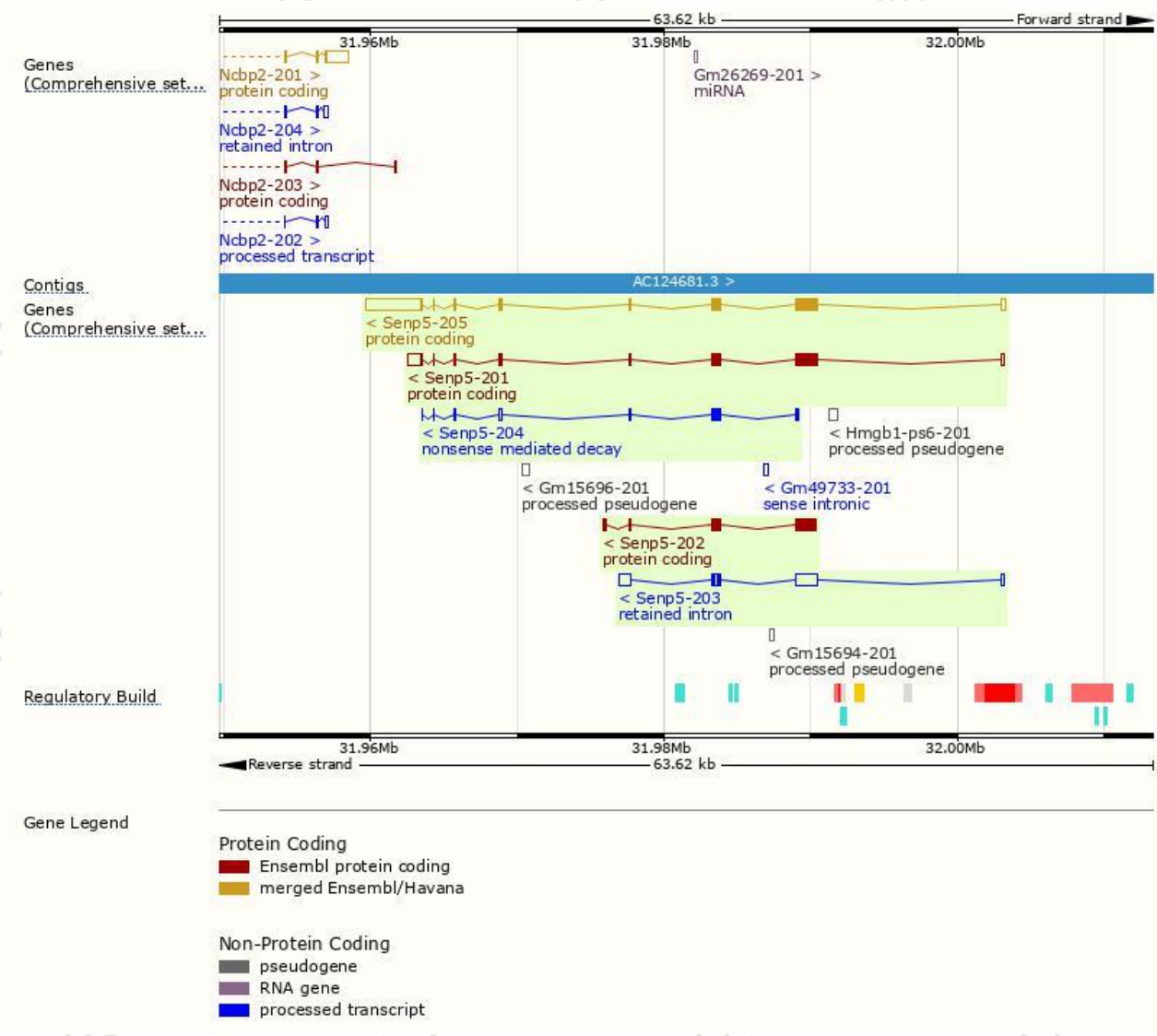
Protein domain
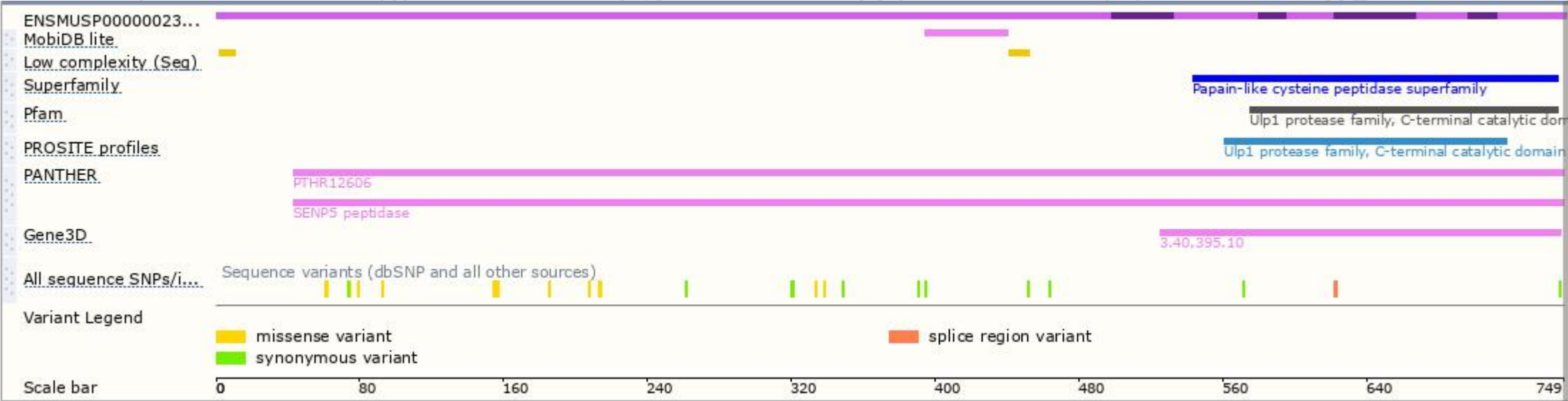
If you have any questions, you are welcome to inquire.
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