Osm Cas9-KO Strategy

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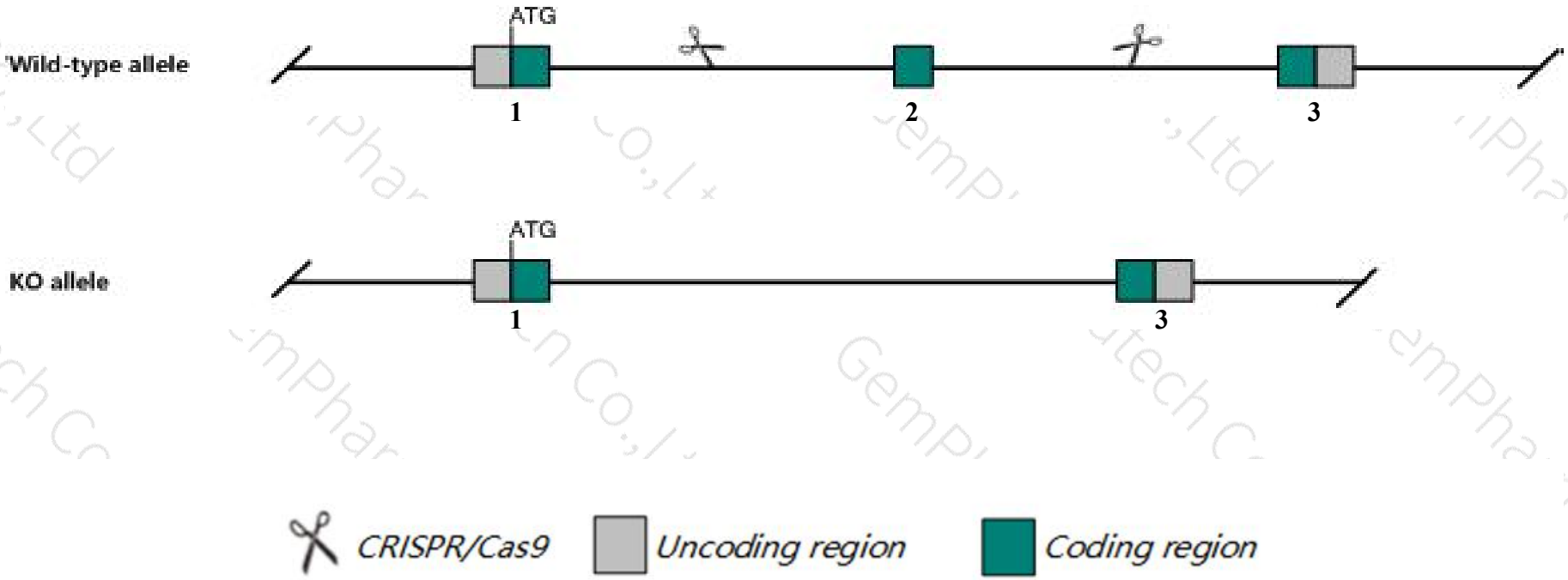
Reviewer: JiaYu

Project Overview

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

Knockout strategy

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



Technical routes

➢ The *Osm* gene has 2 transcripts. According to the structure of *Osm* gene, exon2 of *Osm-201* (ENSMUST00000075221.2) transcript is recommended as the knockout region.The region contains 137bp coding sequence. Knock out the region will result in disruption of protein function.

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

Notice

- According to the existing MGI data,Homozygous mutant mice display decreased noxious responses in models of acute thermal, mechanical, chemical, and visceral pain.

- The *Osm* gene is located on the Chr11. 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）

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Osm oncostatin M [Mus musculus (house mouse)]

Gene ID: 18413, updated on 31-Jan-2019

Summary

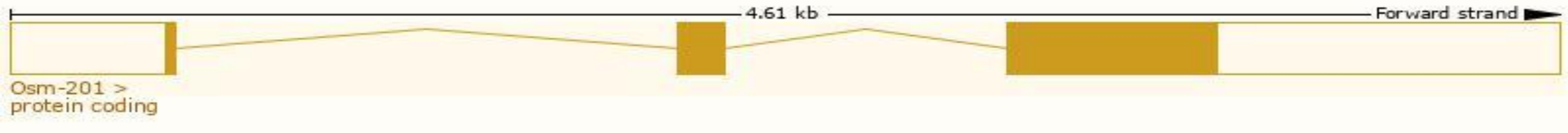
Official Symbol	Osm provided by MGI
Official Full Name	oncostatin M provided by MGI
Primary source	MGI:MGI:104749
See related	Ensembl:ENSMUSG00000058755
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	OncoM
Expression	Broad expression in spleen adult (RPKM 1.9), thymus adult (RPKM 1.8) and 15 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

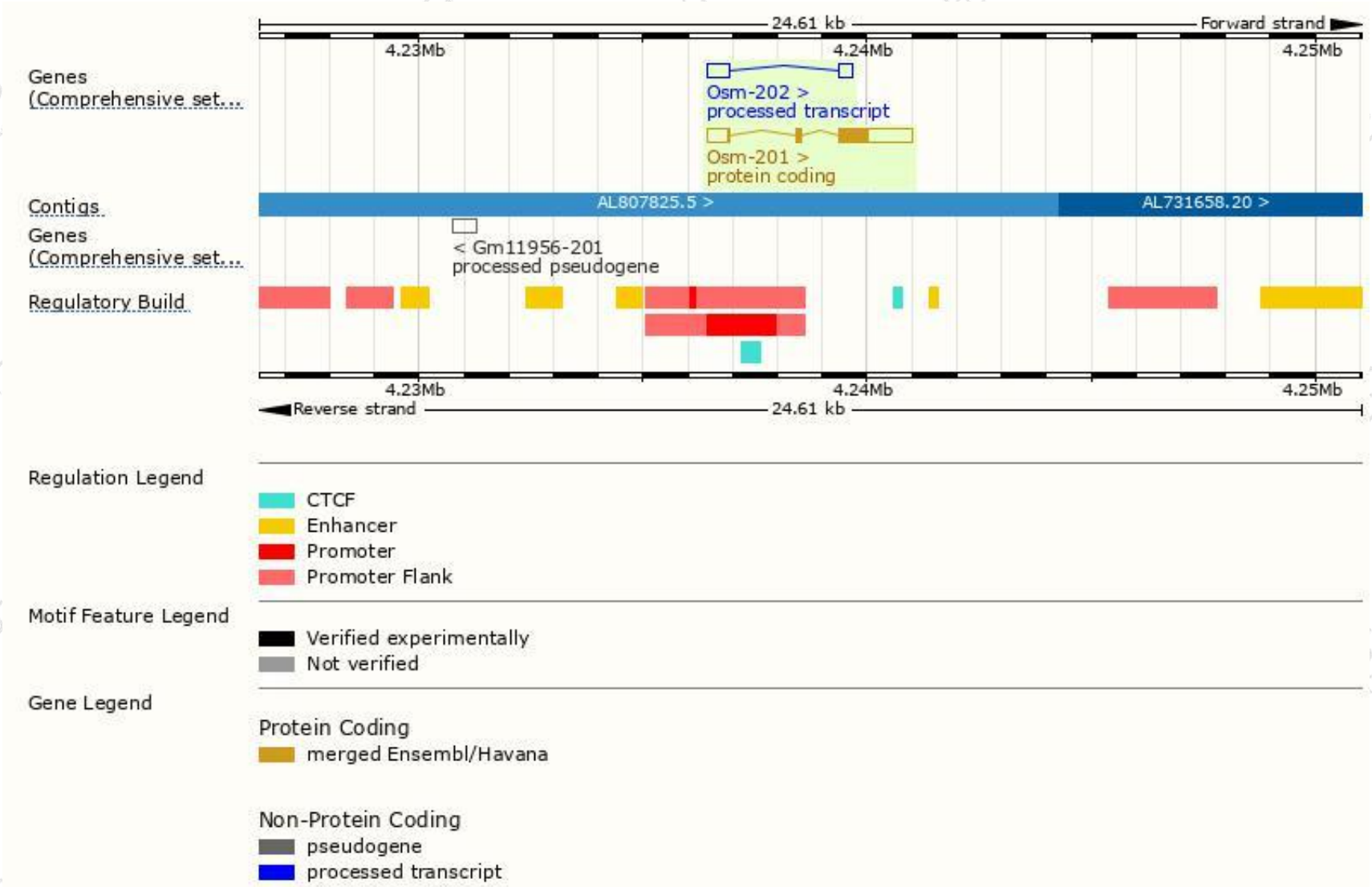
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Osm-201	ENSMUST00000075221.2	2272	263aa	Protein coding	CCDS24382	P53347	TSL:1 GENCODE basic APPRIS P1
Osm-202	ENSMUST00000131764.1	773	No protein	Processed transcript	-	-	TSL:2

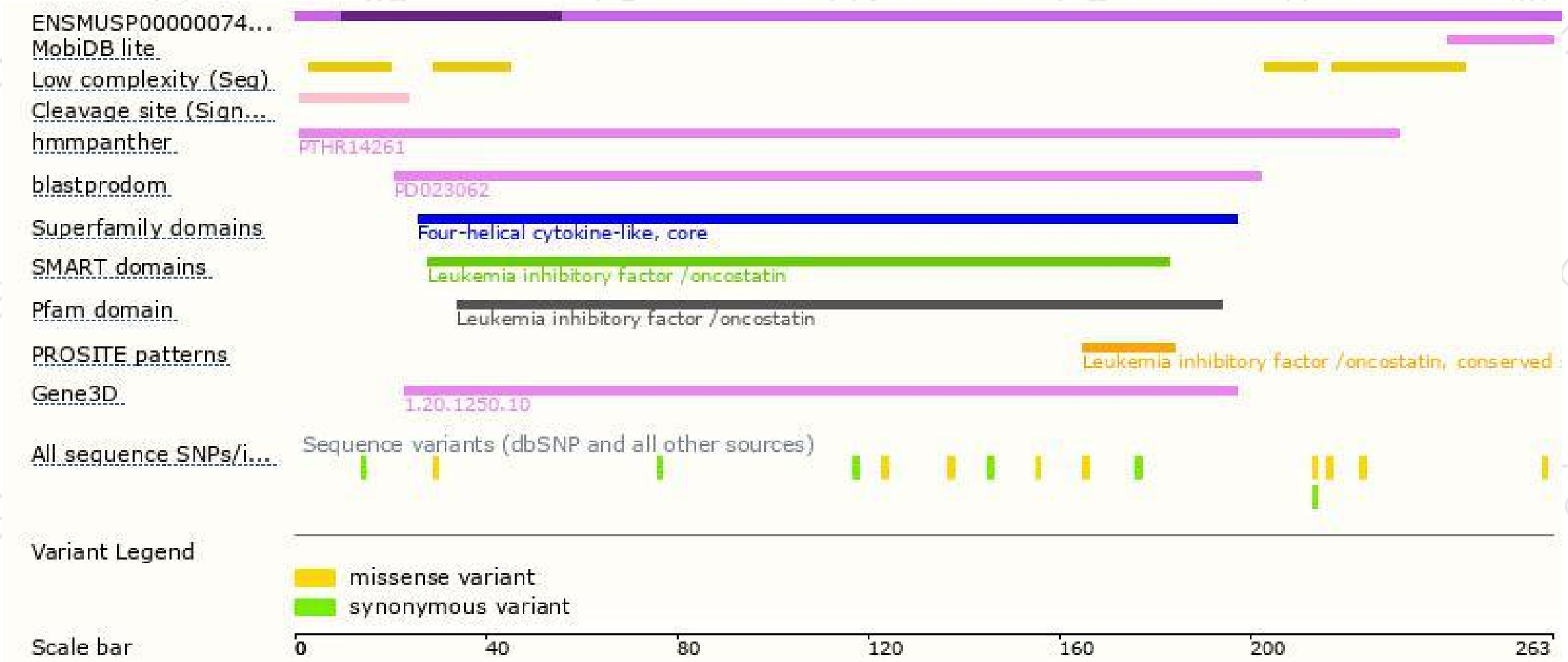
The strategy is based on the design of *Osm-201* transcript,The transcription is shown below



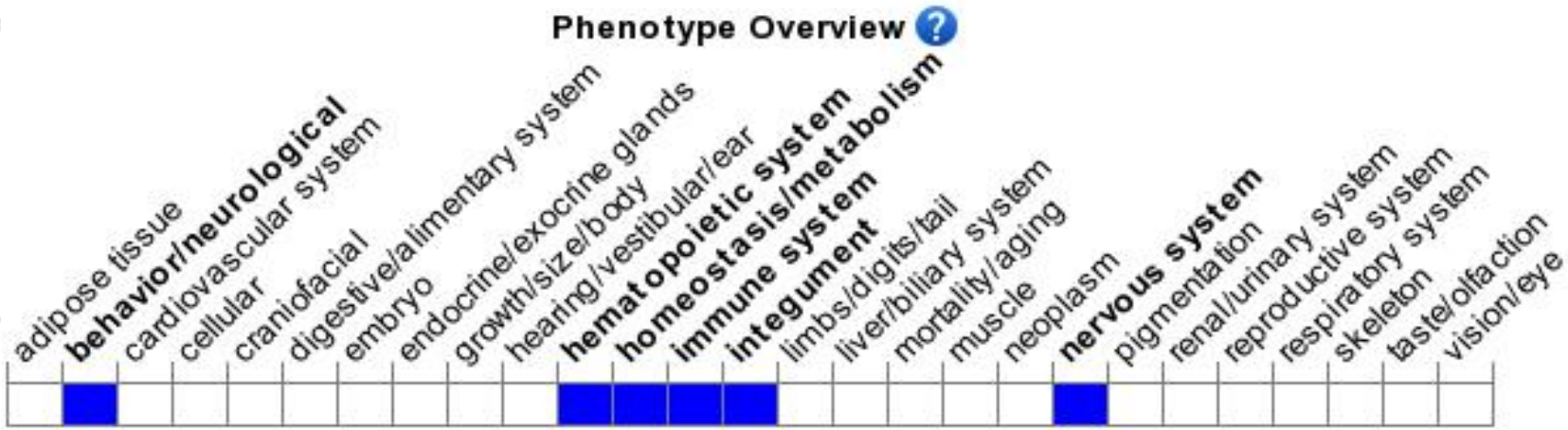
Genomic location distribution



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/).

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

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