

Desi1 Cas9-KO Strategy

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Project Overview

Project Name

Desi1

Project type

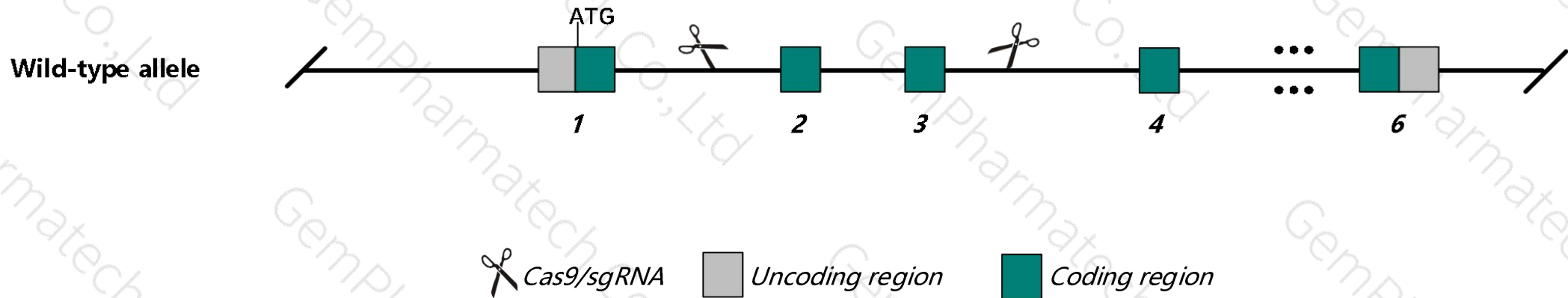
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Desi1* gene. The schematic diagram is as follows:



- The *Desi1* gene has 6 transcripts. According to the structure of *Desi1* gene, exon2-exon3 of *Desi1-206* (ENSMUST00000152227.7) transcript is recommended as the knockout region. The region contains 92bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Desi1* gene. The brief process is as follows: CRISPR/Cas9 system

- The *Desil* 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.
- The knockout region is located in the intron of *Xrcc6-207*, which may affect its normal cleavage.
- 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)

Desi1 desumoylating isopeptidase 1 [*Mus musculus* (house mouse)]

Gene ID: 28075, updated on 13-Mar-2020

Summary

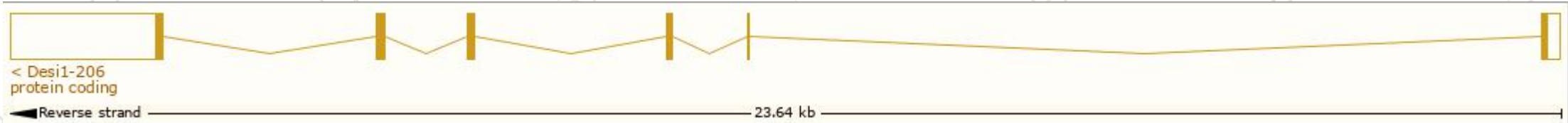
Official Symbol	Desi1 provided by MGI
Official Full Name	desumoylating isopeptidase 1 provided by MGI
Primary source	MGI:MGI:106313
See related	Ensembl:ENSMUSG00000022472
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	DeSI-1; Pppde2; Fam152b; AI427858; AI850401; D15Wsu75e
Expression	Broad expression in testis adult (RPKM 105.5), thymus adult (RPKM 62.0) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

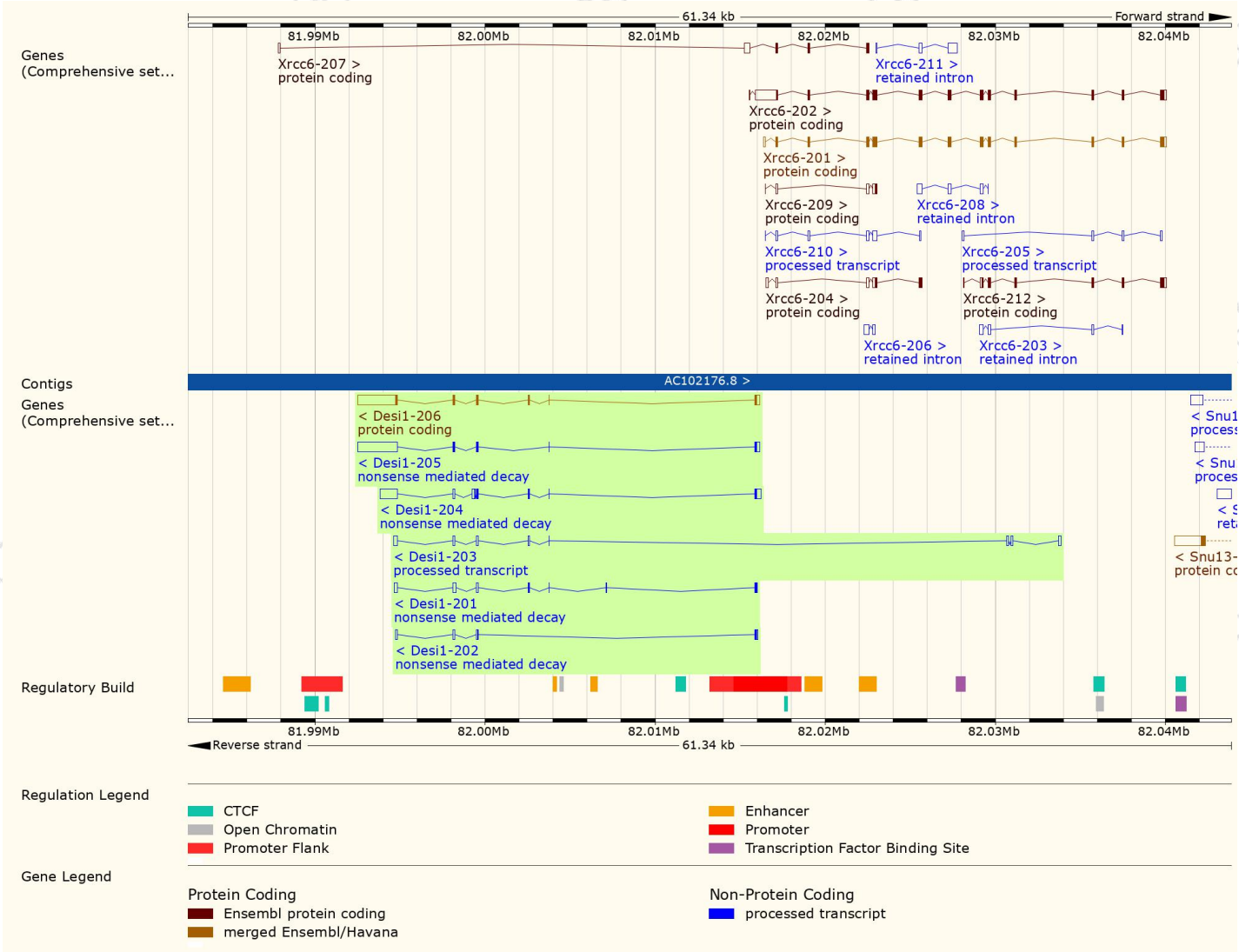
The gene has 6 transcripts,all transcripts are shown below:

Name ▲	Transcript ID ▲	bp ▲	Protein ▲	Biotype ▲	CCDS ▲	UniProt ▲	Flags ▲
Desi1-201	ENSMUST00000023110.6	748	57aa	Nonsense mediated decay	-	F8WJJ8	TSL:3
Desi1-202	ENSMUST00000089187.6	518	41aa	Nonsense mediated decay	-	E9Q2Y9	TSL:5
Desi1-203	ENSMUST00000129039.7	881	No protein	Processed transcript	-	-	TSL:5
Desi1-204	ENSMUST00000135988.7	1855	106aa	Nonsense mediated decay	-	Q3TCG9	TSL:1
Desi1-205	ENSMUST00000146628.7	2854	95aa	Nonsense mediated decay	-	D6RDE8	TSL:1
Desi1-206	ENSMUST00000152227.7	2934	168aa	Protein coding	CCDS27681	Q9CQT7	TSL:1 GENCODE basic APPRIS P1

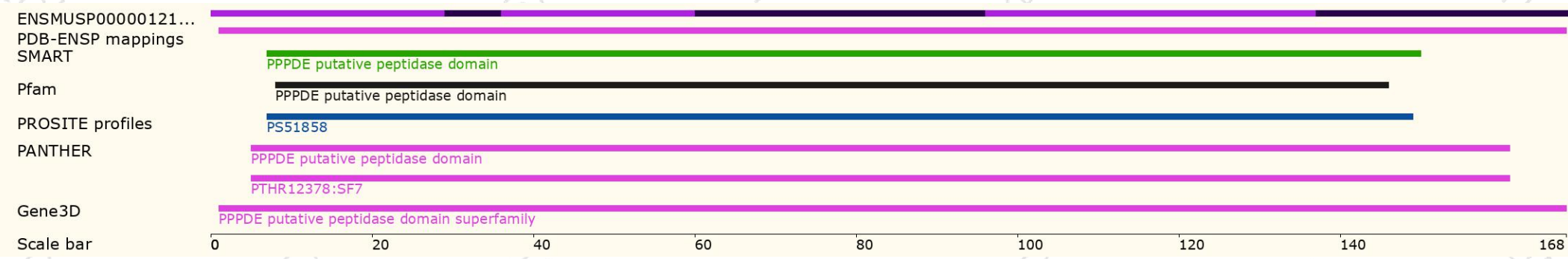
The strategy is based on the design of *Desi1-206* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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