

Ext1 Cas9-KO Strategy

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Reviewer:

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Design Date:

2019-9-12

Project Overview

Project Name

Ext1

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ext1* gene. The schematic diagram is as follows:



- The *Ext1* gene has 4 transcripts. According to the structure of *Ext1* gene, exon2 of *Ext1-201* (ENSMUST00000077273.8) transcript is recommended as the knockout region. The region contains 94bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ext1* gene. The brief process is as follows: CRISPR/Cas9 system w

- According to the existing MGI data, Mice homozygous for disruptions in this gene display a lethal phenotype.
- The *Ext1* 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)

Ext1 exostoses (multiple) 1 [Mus musculus (house mouse)]

Gene ID: 14042, updated on 9-Apr-2019

Summary



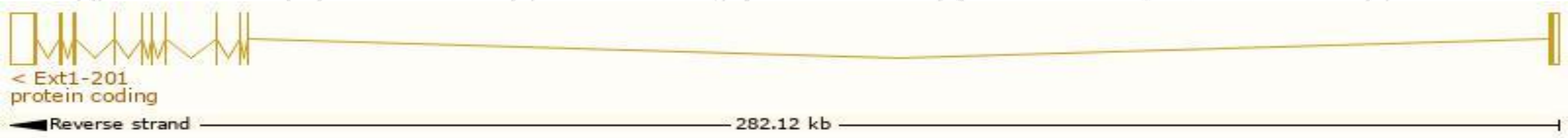
Official Symbol	Ext1 provided by MGI
Official Full Name	exostoses (multiple) 1 provided by MGI
Primary source	MGI:MGI:894663
See related	Ensembl:ENSMUSG000000061731
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AA409028
Expression	Ubiquitous expression in limb E14.5 (RPKM 15.9), CNS E11.5 (RPKM 14.4) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

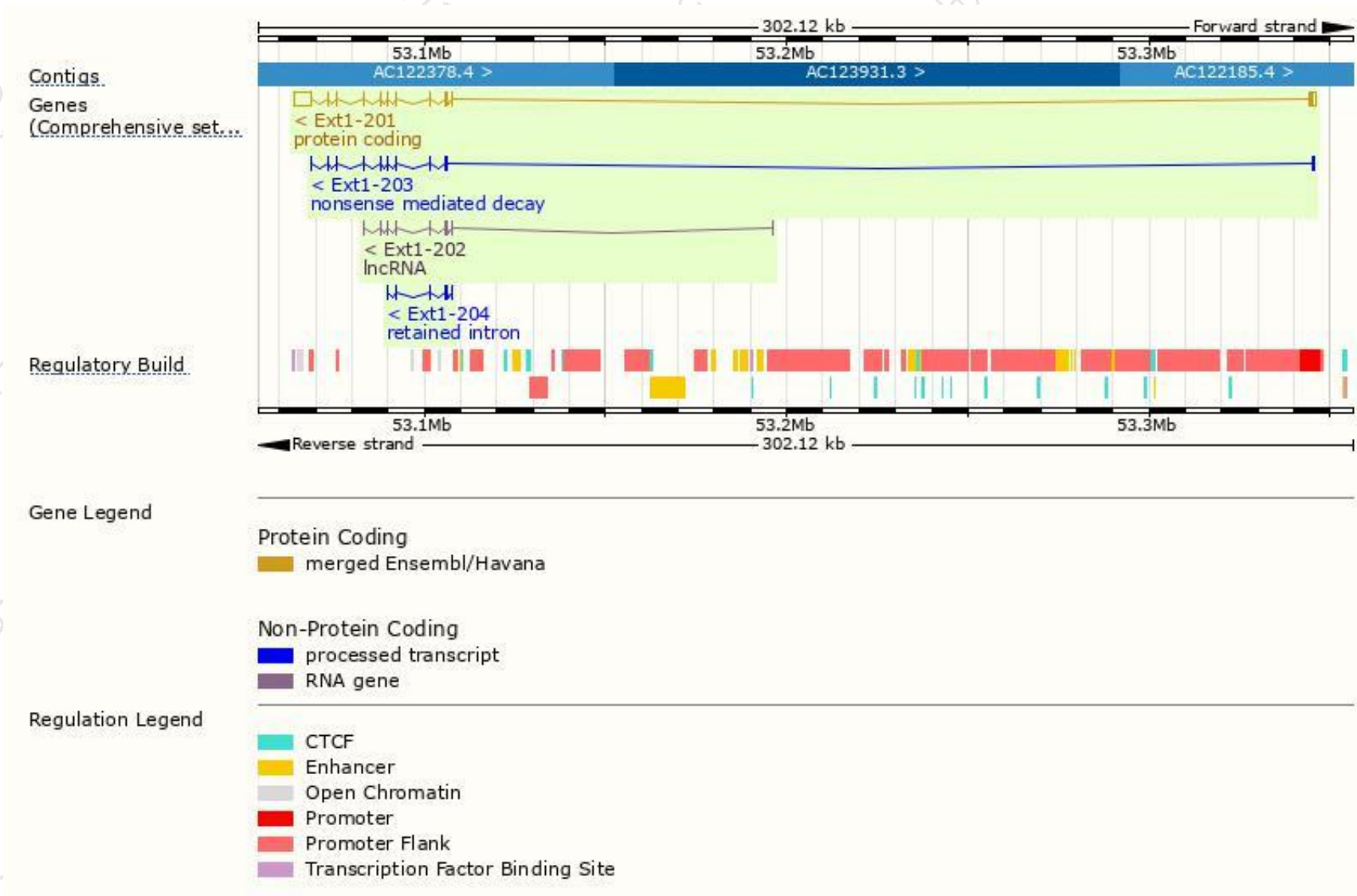
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ext1-201	ENSMUST00000077273.8	7663	746aa	Protein coding	CCDS27466	P97464 Q3V1P4	TSL:1 GENCODE basic APPRIS P1
Ext1-203	ENSMUST00000133362.7	1554	44aa	Nonsense mediated decay	-	D6RE56	TSL:5
Ext1-204	ENSMUST00000140798.1	871	No protein	Retained intron	-	-	TSL:3
Ext1-202	ENSMUST00000110244.1	816	No protein	lncRNA	-	-	TSL:3

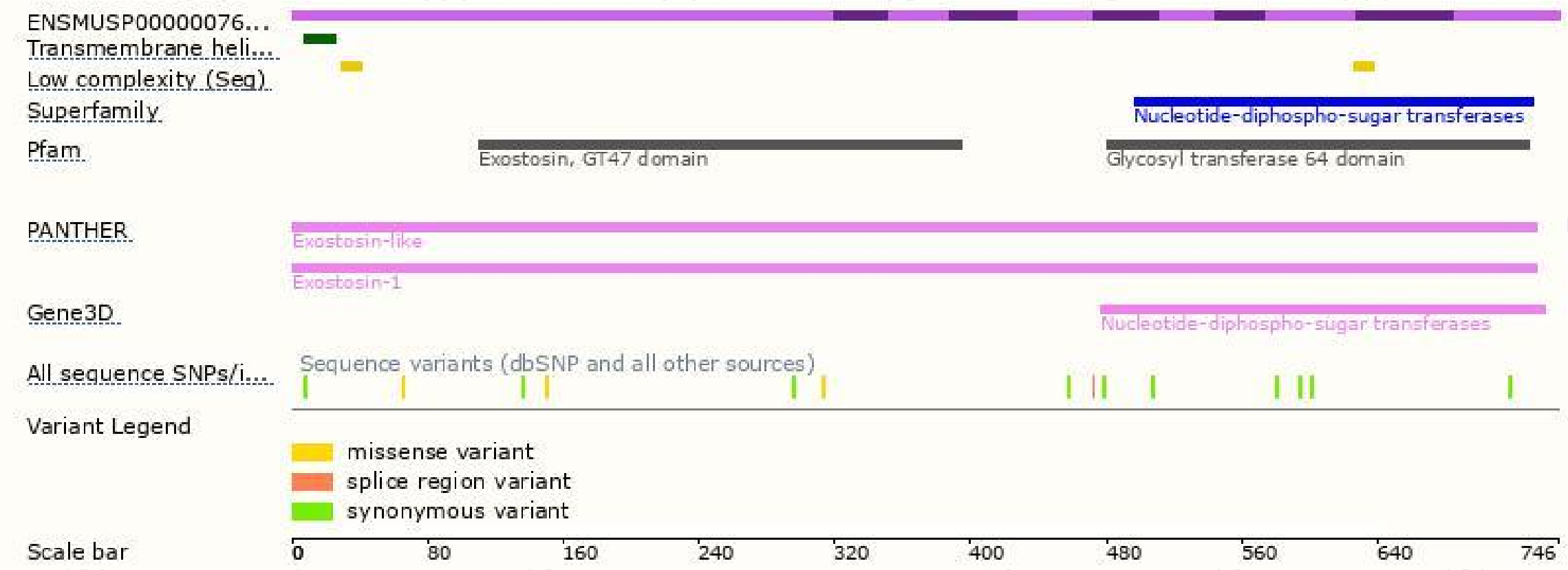
The strategy is based on the design of *Ext1-201* transcript,The transcription is shown below



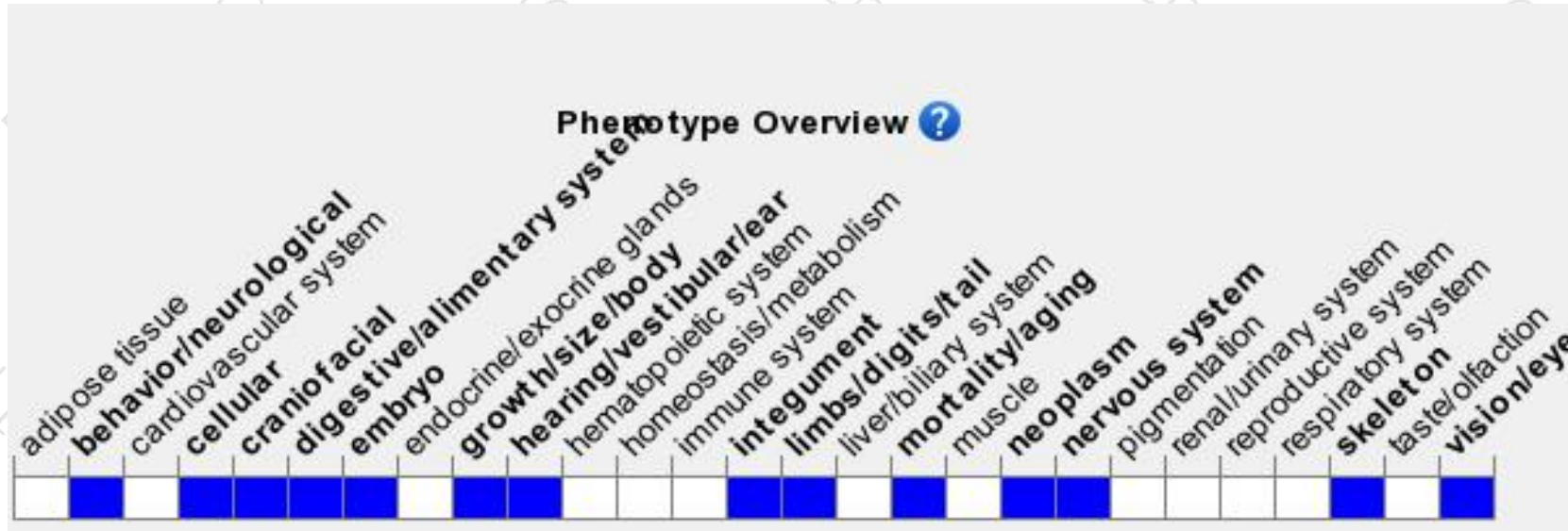
Genomic location distribution



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/>).

According to the existing MGI data, Mice homozygous for disruptions in this gene display a lethal phenotype.

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

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