

Yy1 Cas9-KO Strategy

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Reviewer:

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Project Overview

Project Name

Yy1

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Yy1* gene. The schematic diagram is as follows:



- The *Yy1* gene has 2 transcripts. According to the structure of *Yy1* gene, exon2 of *Yy1-201* (ENSMUST00000021692.8) transcript is recommended as the knockout region. The region contains 163bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Yy1* gene. The brief process is as follows: CRISPR/Cas9 system w

- According to the existing MGI data, Homozygous null mice die in utero shortly after implantation. Incomplete penetrance of embryonic growth retardation and exencephaly are observed in haploinsufficient mice.
- The *Yy1* gene is located on the Chr12. 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)

Yy1 YY1 transcription factor [Mus musculus (house mouse)]

Gene ID: 22632, updated on 9-Apr-2019

Summary



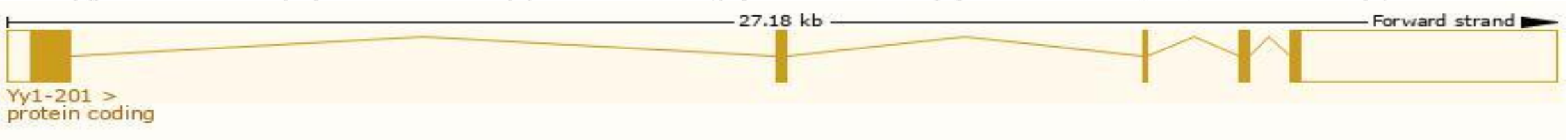
Official Symbol	Yy1 provided by MGI
Official Full Name	YY1 transcription factor provided by MGI
Primary source	MGI:MGI:99150
See related	Ensembl:ENSMUSG000000021264
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	NF-E1, YY-1
Expression	Ubiquitous expression in ovary adult (RPKM 28.8), adrenal adult (RPKM 26.0) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

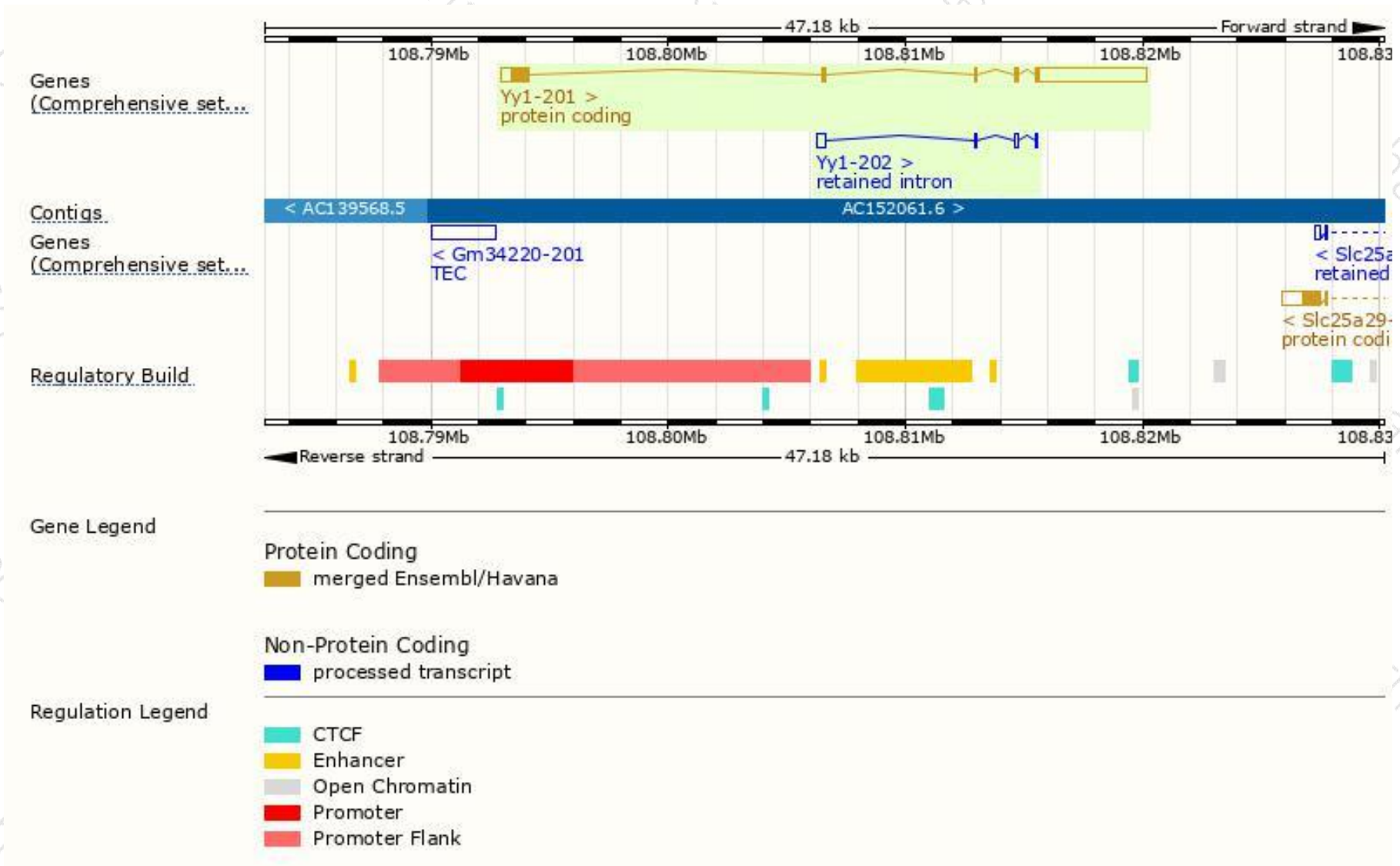
The gene has 2 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Yy1-201	ENSMUST00000021692.8	6178	414aa	Protein coding	CCDS26163	Q00899	TSL:1 GENCODE basic APPRIS P1
Yy1-202	ENSMUST00000126912.1	715	No protein	Retained intron	-	-	TSL:2

The strategy is based on the design of *Yy1-201* transcript,The transcription is shown below



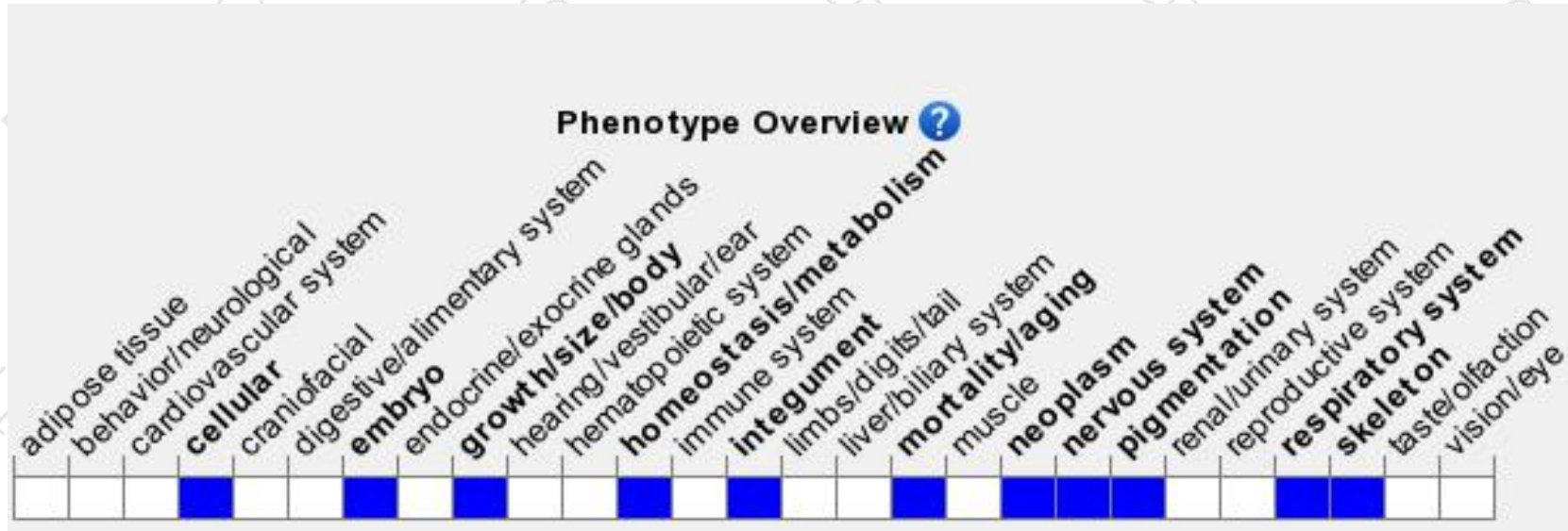
Genomic location distribution



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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