Asb10 Cas9-KO Strategy

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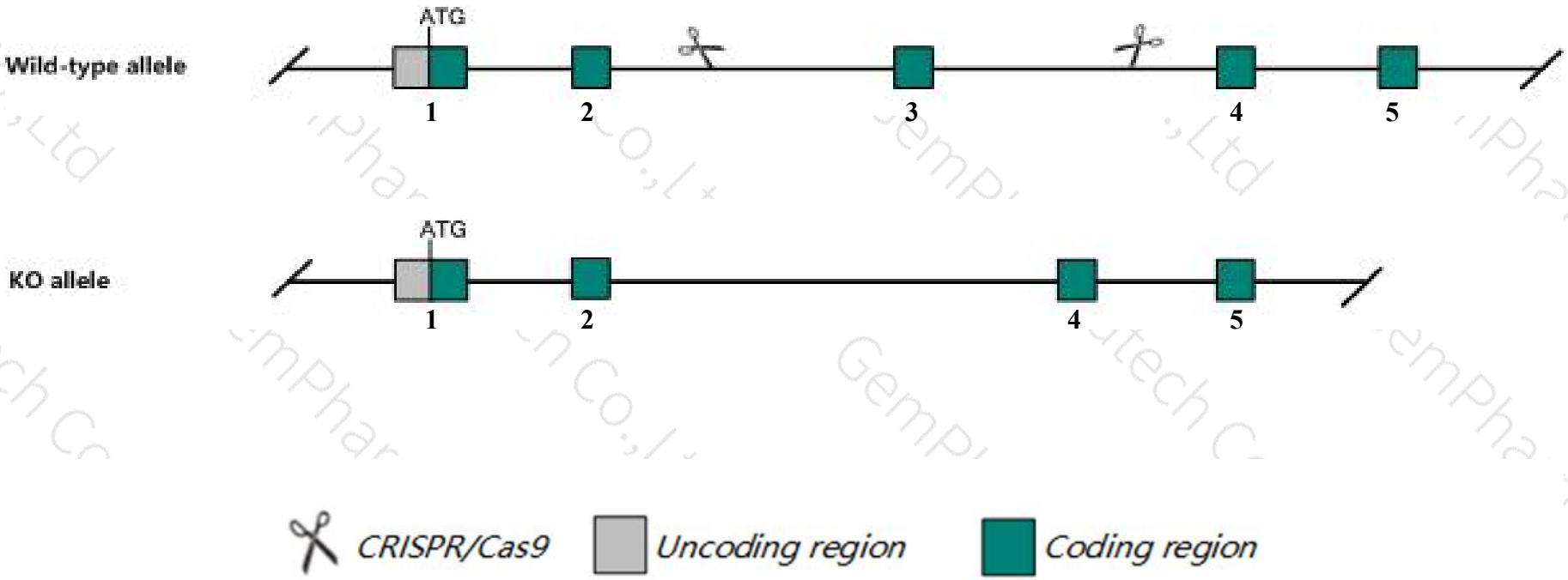
Project Overview

Project Name	***Asb10***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Asb10* gene. The schematic diagram is as follows:



Technical routes

➢ The *Asb10* gene has 3 transcripts. According to the structure of *Asb10* gene, exon3 of *Asb10-201* (ENSMUST00000048302.12) transcript is recommended as the knockout region.The region contains 520bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Asb10* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

➢ The *Asb10* gene is located on the Chr5. 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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Asb10 ankyrin repeat and SOCS box-containing 10 [*Mus musculus* (house mouse)]

Gene ID: 117590, updated on 31-Jan-2019

Summary

Official Symbol	Asb10 provided by MGI
Official Full Name	ankyrin repeat and SOCS box-containing 10 provided by MGI
Primary source	MGI:MGI:2152836
See related	Ensembl:ENSMUSG00000038204
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	Asb-10; BB137407
Expression	Biased expression in heart adult (RPKM 42.5) and mammary gland adult (RPKM 4.3) See more
Orthologs	human all

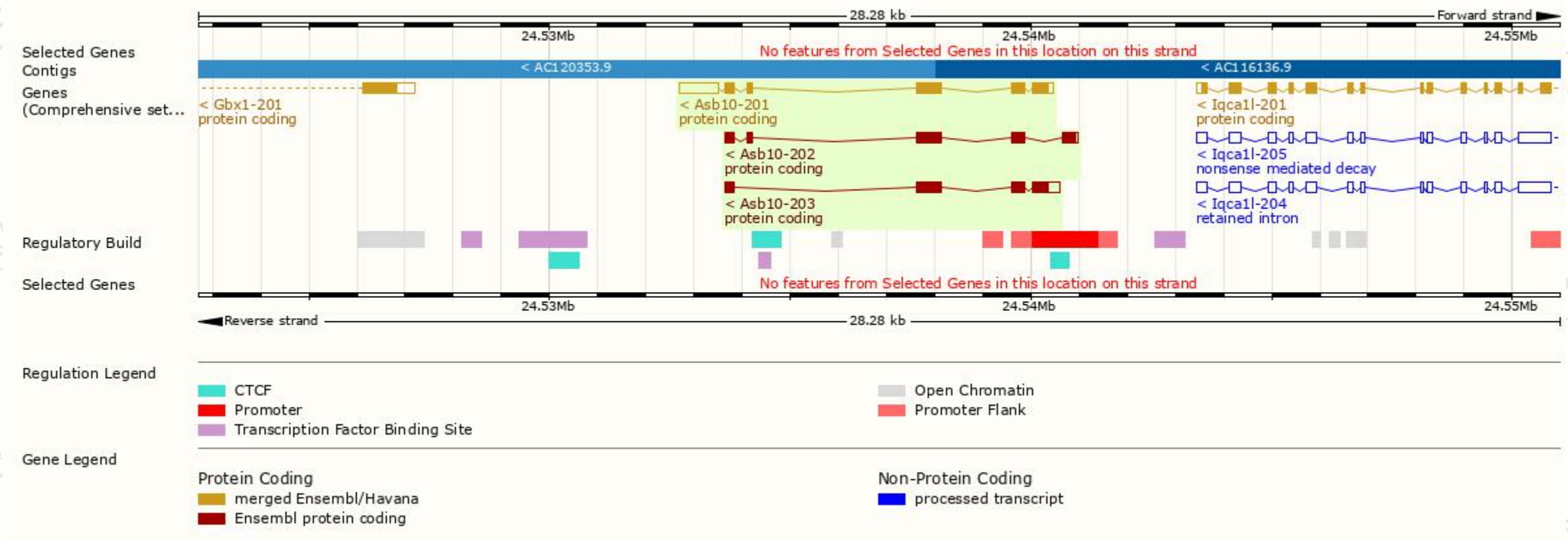
Transcript information（Ensembl）

The gene has 3 transcripts,all transcripts are shown below:

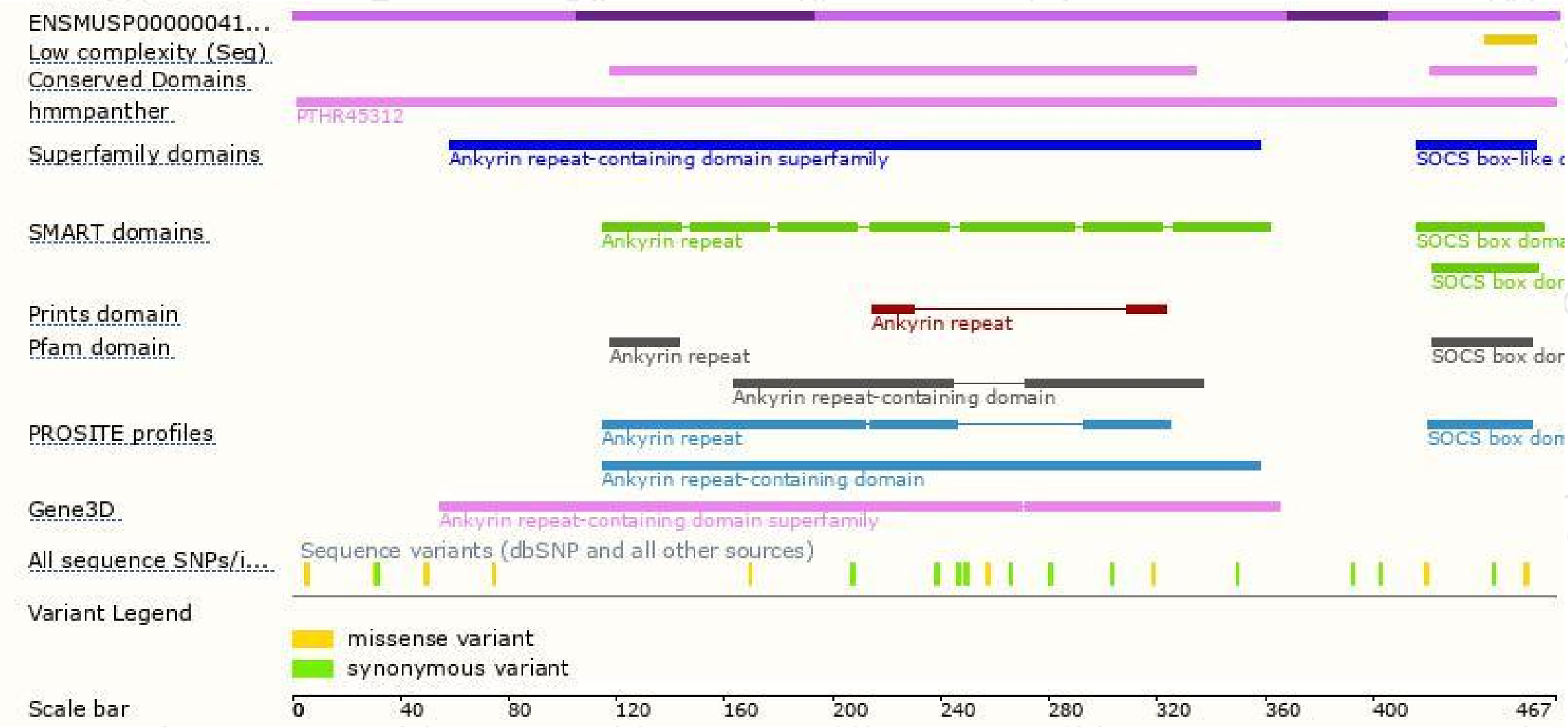
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Asb10-201	ENSMUST00000048302.12	2327	467aa	Protein coding	CCDS19124	Q91ZT7	TSL:1 GENCODE basic APPRIS P1
Asb10-202	ENSMUST00000117900.7	1432	452aa	Protein coding	CCDS80229	D3YU18	TSL:5 GENCODE basic
Asb10-203	ENSMUST00000119657.1	1536	429aa	Protein coding	-	D3Z651	TSL:5 GENCODE basic

The strategy is based on the design of *Asb10-201* transcript,The transcription is shown below

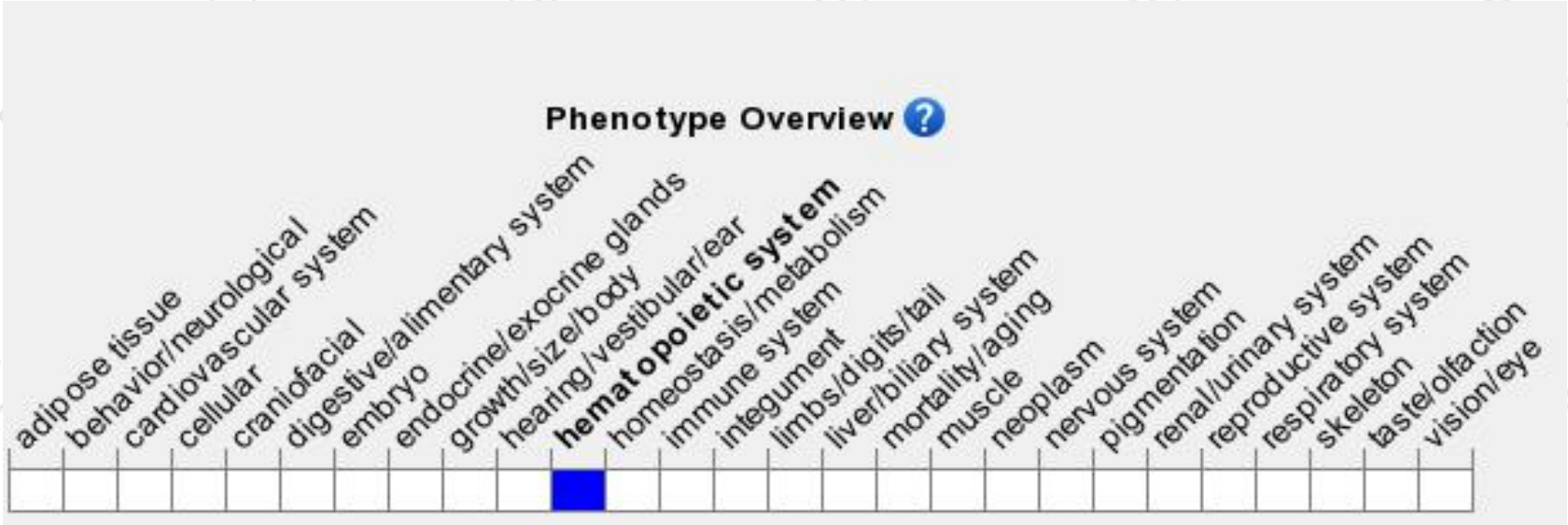
Genomic location distribution



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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