Ints12 Cas9-KO Strategy

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Project Overview

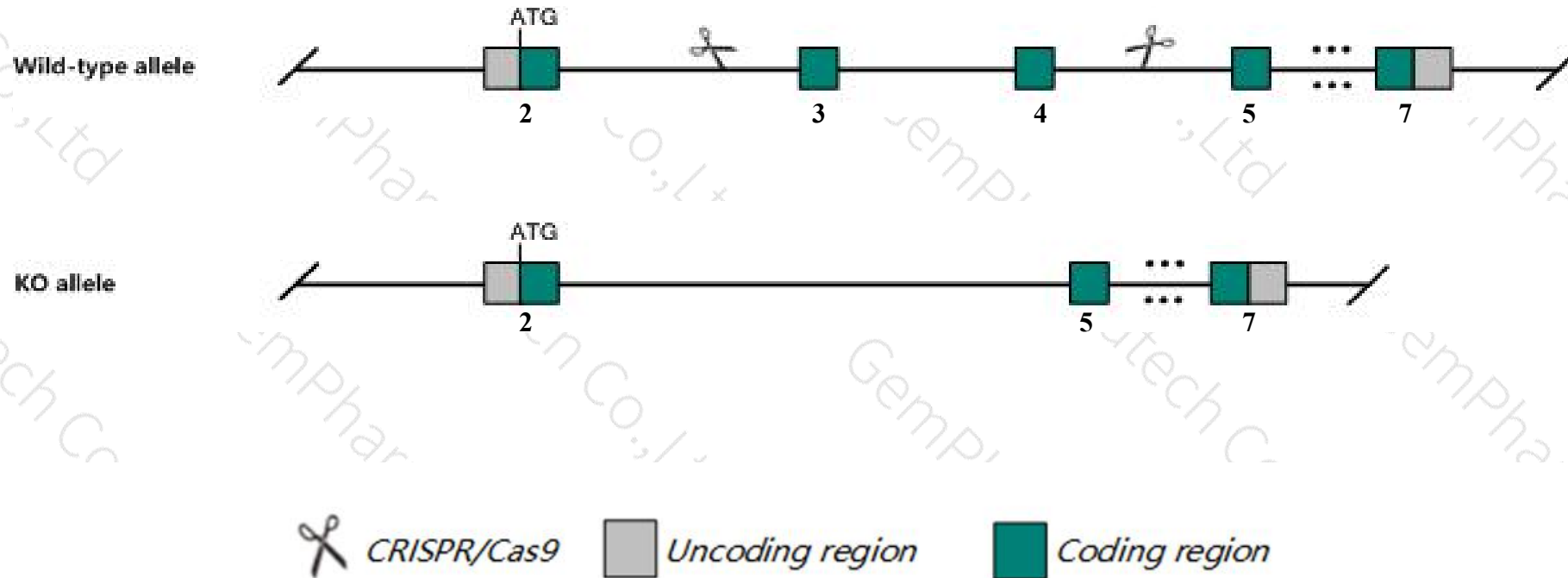|	
Project Name	*Ints12*
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ints12* gene. The schematic diagram is as follows:

Technical routes

➢ The *Ints12* gene has 3 transcripts. According to the structure of *Ints12* gene, exon3-exon4 of *Ints12-201* (ENSMUST00000029650.8) transcript is recommended as the knockout region.The region contains 338bp coding sequence. Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Ints12* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

➢ The *Ints12* gene is located on the Chr3. 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）

Ints12 integrator complex subunit 12 [Mus musculus (house mouse)]

Gene ID: 71793, updated on 9-Apr-2019

▲ Summary

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Official Symbol	Ints12 provided by MGI
Official Full Name	integrator complex subunit 12 provided by MGI
Primary source	MGI:MGI:1919043
See related	Ensembl:ENSMUSG00000028016
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	1110020M19Rik, 2810027J24Rik, 4930529N21Rik, A230056J18Rik, AI666778, Phf22, int12
Expression	Ubiquitous expression in CNS E11.5 (RPKM 6.0), placenta adult (RPKM 4.7) and 26 other tissues 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
Ints12-201	ENSMUST00000029650.8	3101	461aa	Protein coding	CCDS17848	Q9D168	TSL:1 GENCODE basic APPRIS P1
Ints12-202	ENSMUST00000160036.2	5386	No protein	Retained intron	-	-	TSL:1
Ints12-203	ENSMUST00000160669.1	728	No protein	lncRNA	-	-	TSL:2

The strategy is based on the design of *Ints12-201* transcript,The transcription is shown below

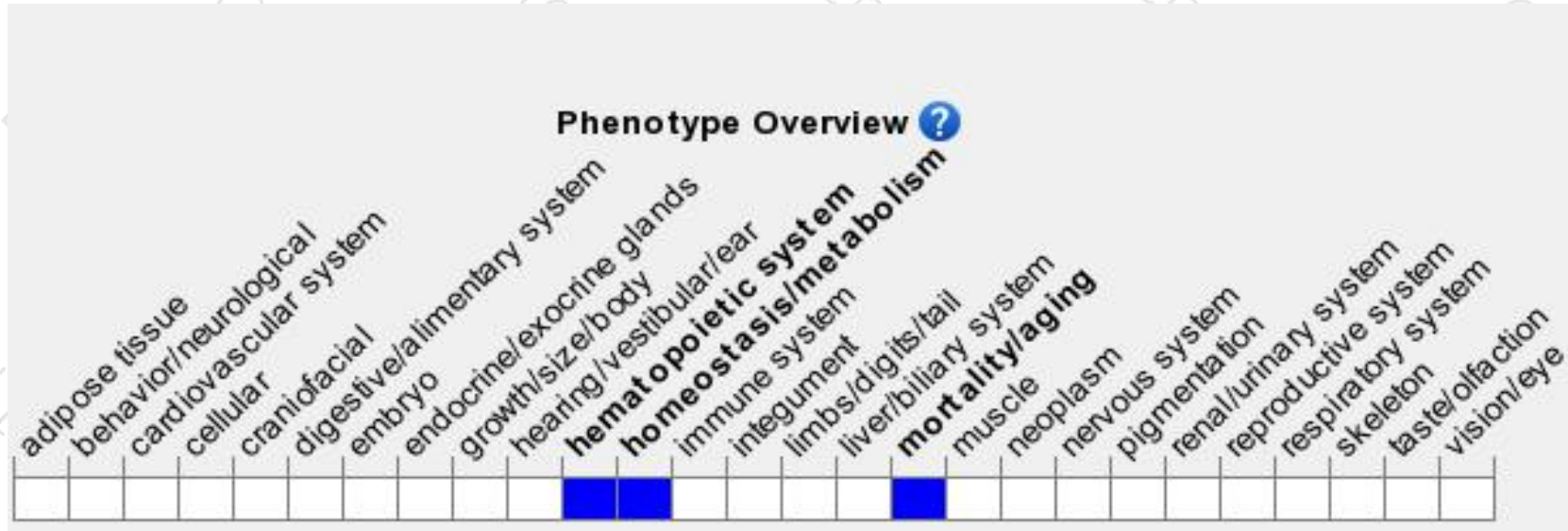19.15 kb   Forward strand

Ints12-201 >
protein coding
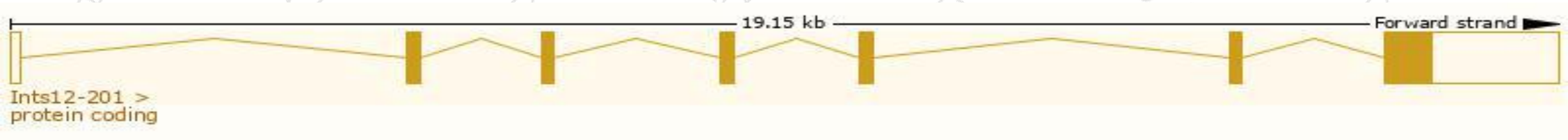
Genomic location distribution
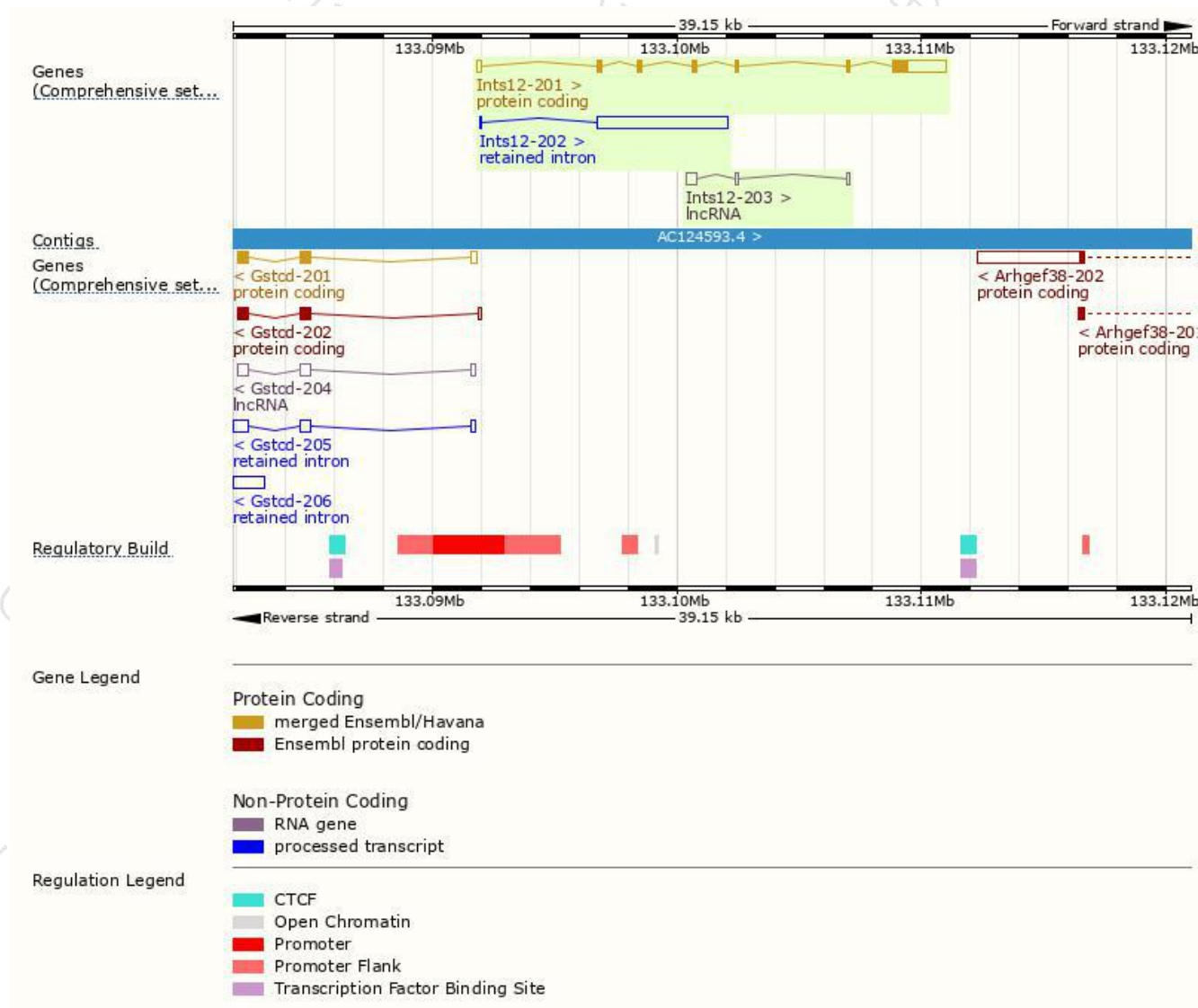
Protein domain
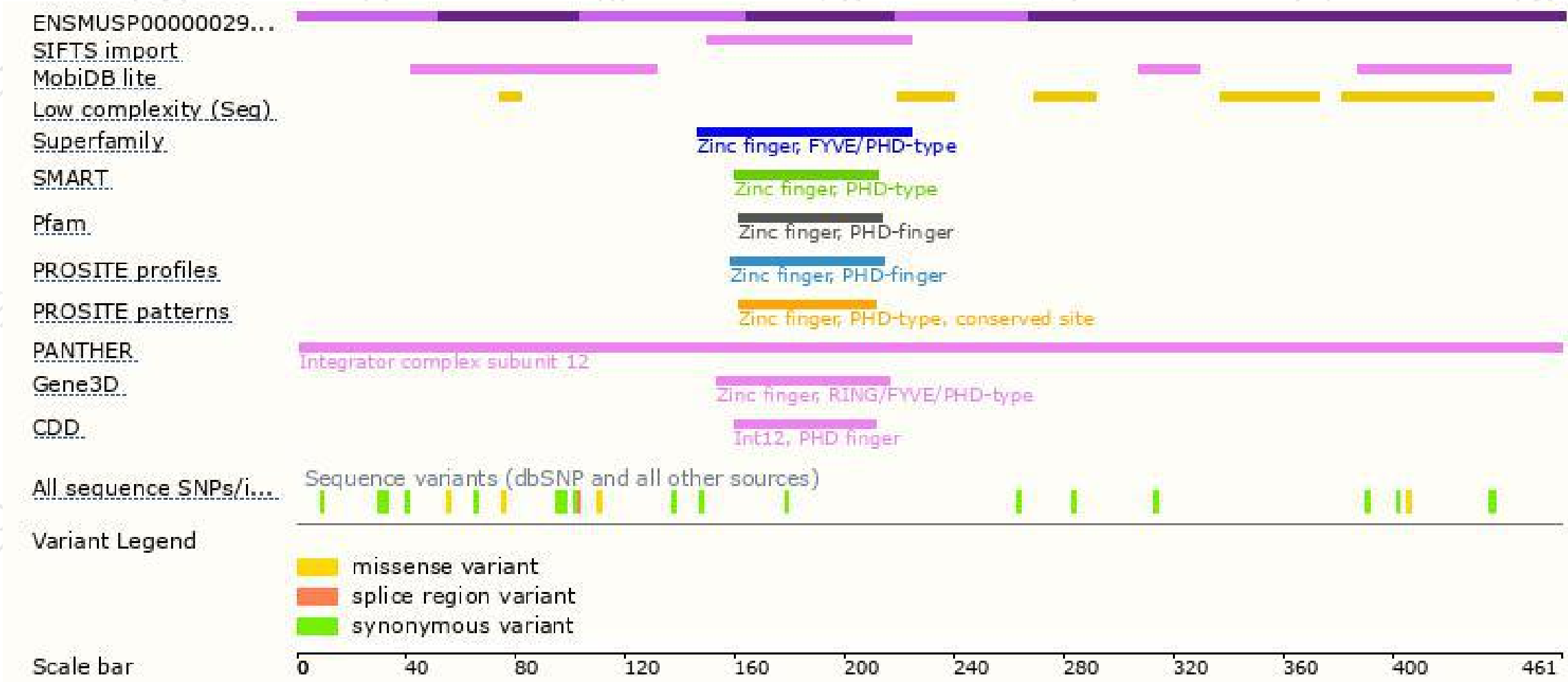
Mouse phenotype description(MGI)

Phenotypes affected by the gene are marked in blue.Data quoted from MGI database(http://www.informatics.jax.org/).

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