

Wnt2 Cas9-KO Strategy

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Project Overview

Project Name

Wnt2

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Wnt2* gene. The schematic diagram is as follows:



- The *Wnt2* gene has 1 transcript. According to the structure of *Wnt2* gene, exon2 of *Wnt2-201* (ENSMUST00000010941.5) transcript is recommended as the knockout region. The region contains 227bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Wnt2* gene. The brief process is as follows: CRISPR/Cas9 system v

- According to the existing MGI data, Homozygous mutants exhibit impaired placental vascularization, runting and 50% perinatal mortality resulting from difficulties in breathing and nursing. Survivors of the perinatal period tend to recover, and adults are healthy and fertile.
- The *Wnt2* gene is located on the Chr6. 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)

Wnt2 wingless-type MMTV integration site family, member 2 [Mus musculus (house mouse)]

Gene ID: 22413, updated on 5-Mar-2019

Summary



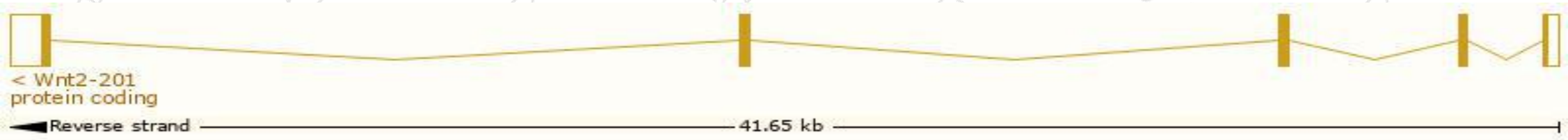
Official Symbol	Wnt2 provided by MGI
Official Full Name	wingless-type MMTV integration site family, member 2 provided by MGI
Primary source	MGI:MGI:98954
See related	Ensembl:ENSMUSG00000010797
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2610510E18Rik, Int1l1, Irp, Mirp, Wnt-2, Wnt2a
Expression	Biased expression in bladder adult (RPKM 7.8), lung adult (RPKM 3.1) and 6 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

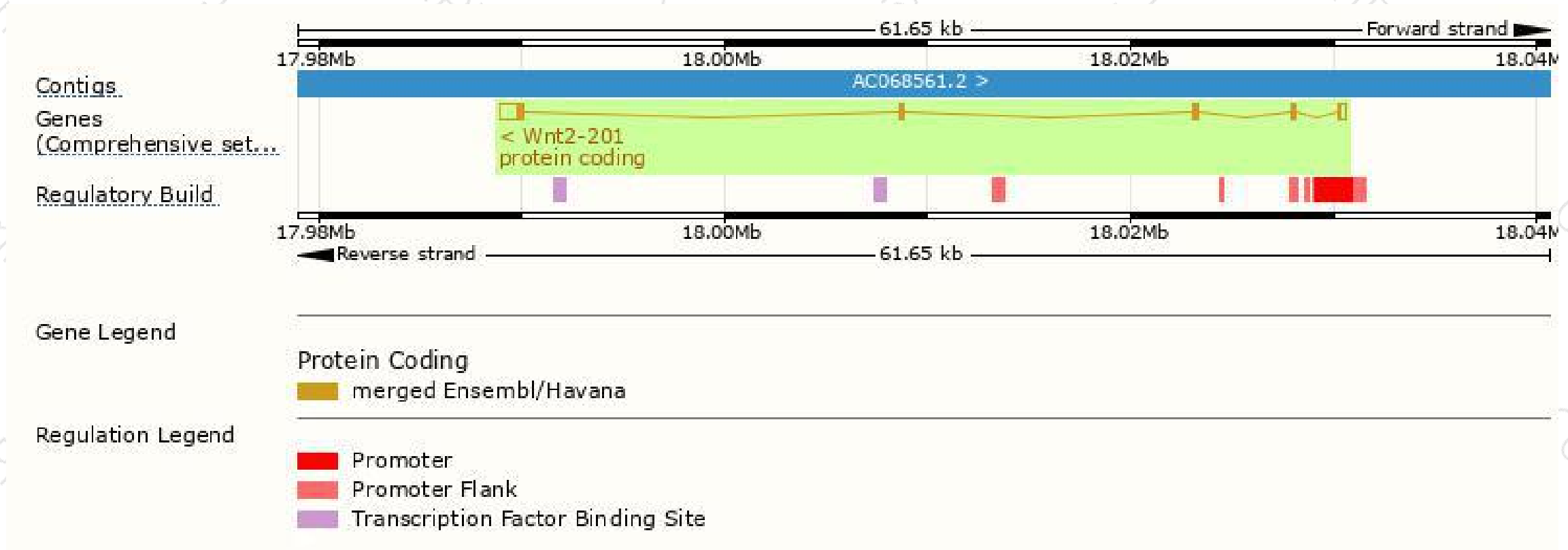
The gene has 1 transcript, and the transcript is shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Wnt2-201	ENSMUST00000010941.5	2255	360aa	Protein coding	CCDS19928	P21552	TSL:1 GENCODE basic APPRIS P1

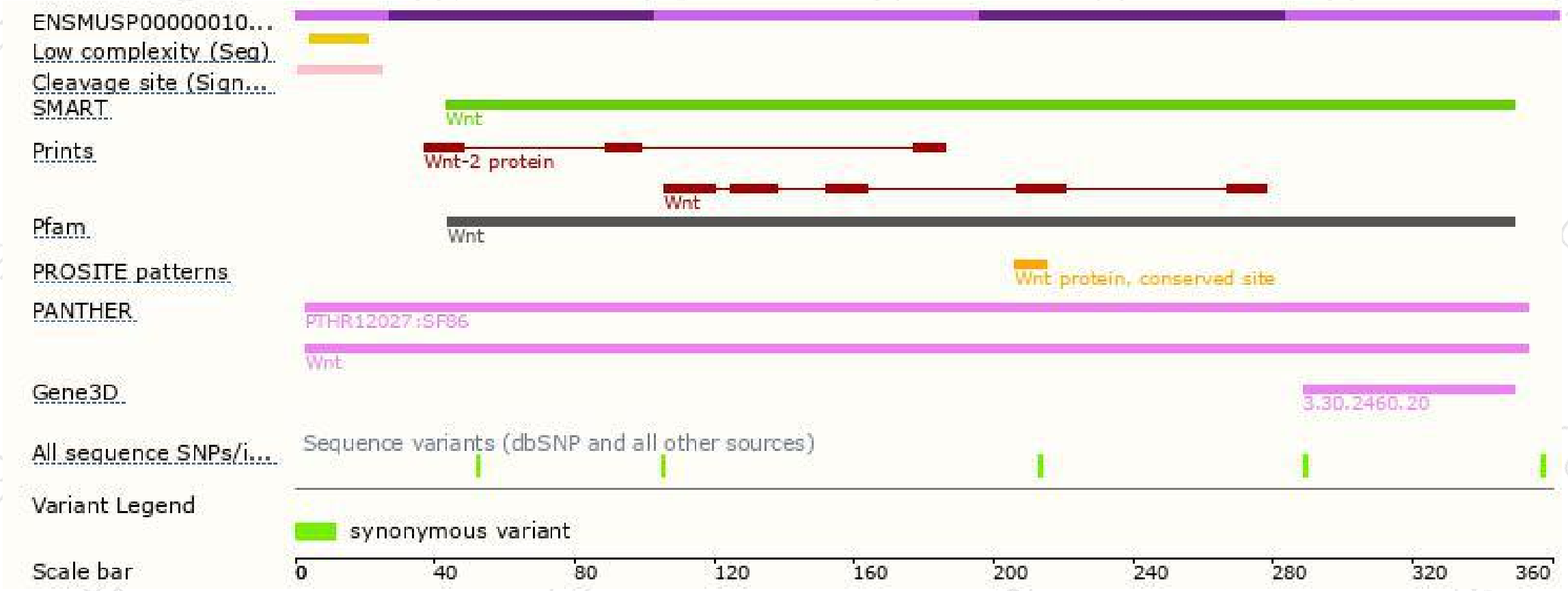
The strategy is based on the design of *Wnt2-201* transcript, The transcription is shown below



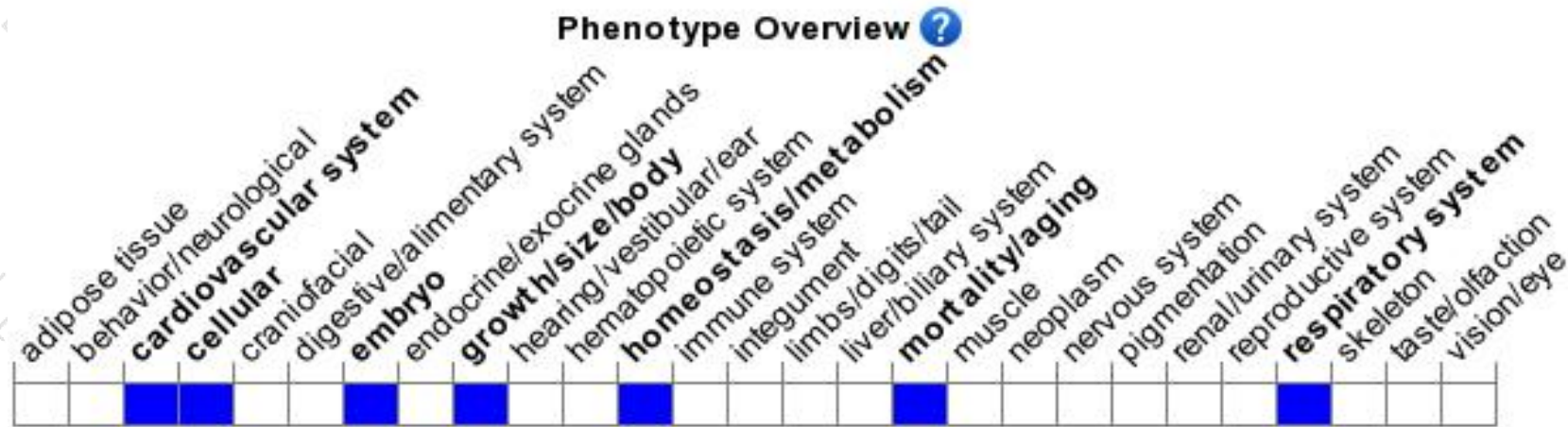
Genomic location distribution



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, Homozygous mutants exhibit impaired placental vascularization, runting and 50% perinatal mortality resulting from difficulties in breathing and nursing. Survivors of the perinatal period tend to recover, and adults are healthy and fertile.

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

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