

Ano7 Cas9-KO Strategy

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Project Overview

Project Name

Ano7

Project type

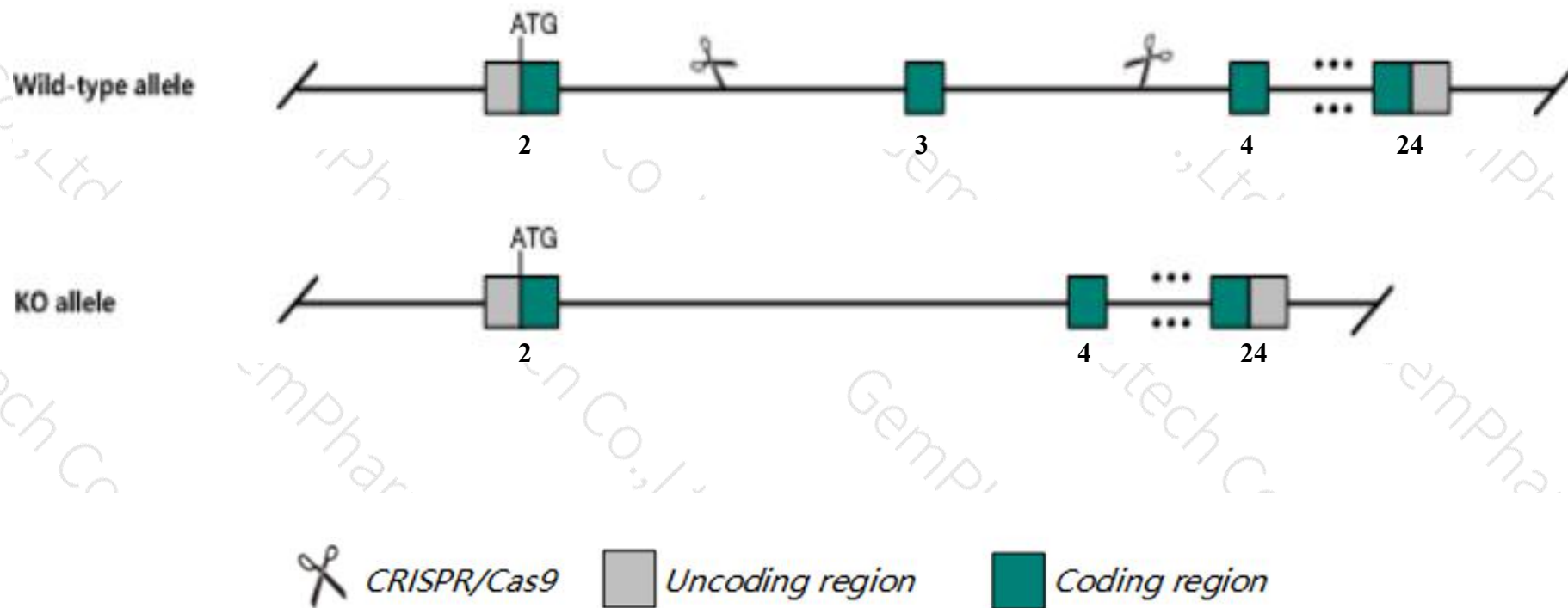
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Ano7* gene. The schematic diagram is as follows:



- The *Ano7* gene has 3 transcripts. According to the structure of *Ano7* gene, exon3 of *Ano7-202* (ENSMUST00000186641.6) transcript is recommended as the knockout region. The region contains 58bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Ano7* gene. The brief process is as follows: CRISPR/Cas9 system v

- Transcript *Ano7-203* is incomplete, so the effect on it is unknown.
- The *Ano7* gene is located on the Chr1. 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)

Ano7 anoctamin 7 [*Mus musculus* (house mouse)]

Gene ID: 404545, updated on 3-May-2020

Summary

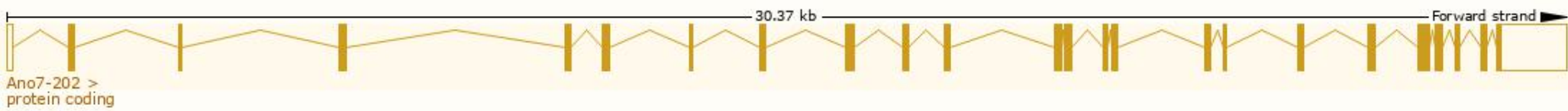
Official Symbol	Ano7 provided by MGI
Official Full Name	anoctamin 7 provided by MGI
Primary source	MGI:MGI:3052714
See related	Ensembl:ENSMUSG00000034107
Gene type	protein coding
RefSeq status	REVIEWED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Ngep; Ngep-L; Pcanap5; Tmem16g
Summary	This gene encodes a member of the anoctamin family, which in mammals is comprised of 10 members. Anoctamin proteins are proposed to have eight transmembrane domains with both termini facing the cytoplasm and a C-terminal domain of unknown function. While some members have been characterized as calcium-activated chloride channels, this protein is reported to have little anion conductance activity. In humans, this protein is primarily found in prostate tissues and may serve as a target for prostate cancer immunotherapy. Alternative splicing results in multiple transcript variants that encode different isoforms. [provided by RefSeq, Dec 2012]
Expression	Biased expression in stomach adult (RPKM 32.3), colon adult (RPKM 26.4) and 3 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

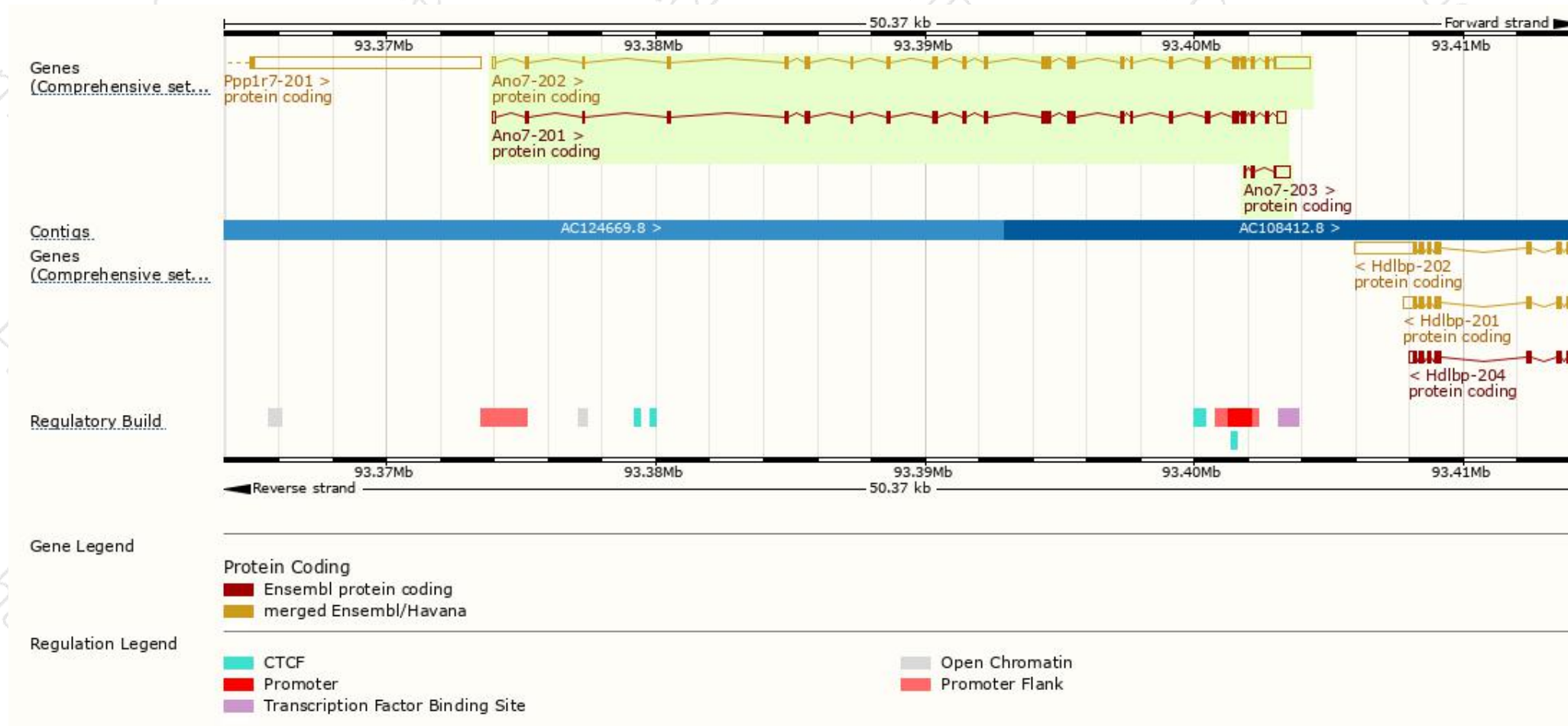
The gene has 3 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Ano7-202	ENSMUST00000186641.6	3984	859aa	Protein coding	CCDS15188	Q14AT5	TSL:5 Gencode basic APPRIS P3
Ano7-201	ENSMUST00000058682.10	2963	843aa	Protein coding	CCDS78656	Q14AT5	TSL:1 Gencode basic APPRIS ALT2
Ano7-203	ENSMUST00000190340.1	755	69aa	Protein coding	-	A0A087WPD8	CDS 5' incomplete TSL:3

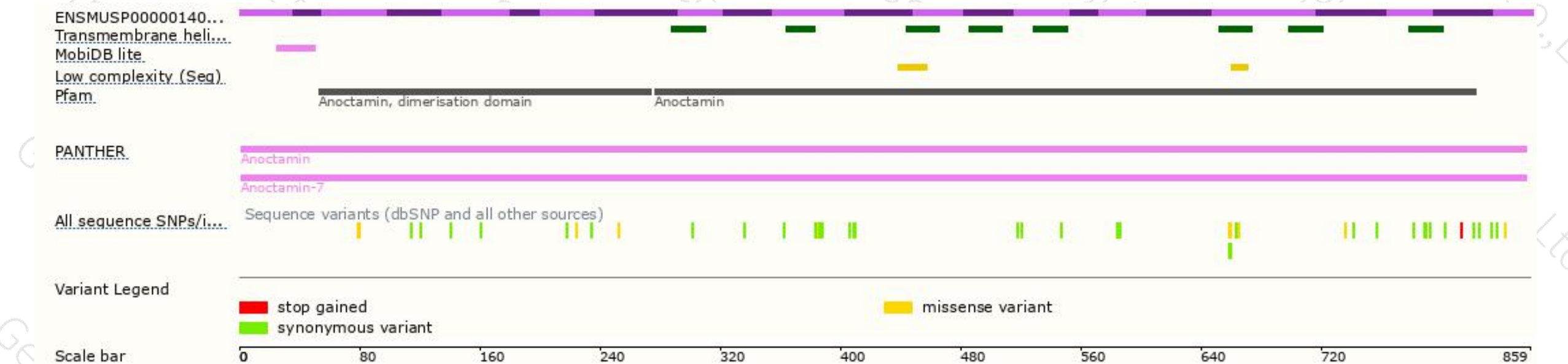
The strategy is based on the design of *Ano7-202* transcript, the transcription is shown below



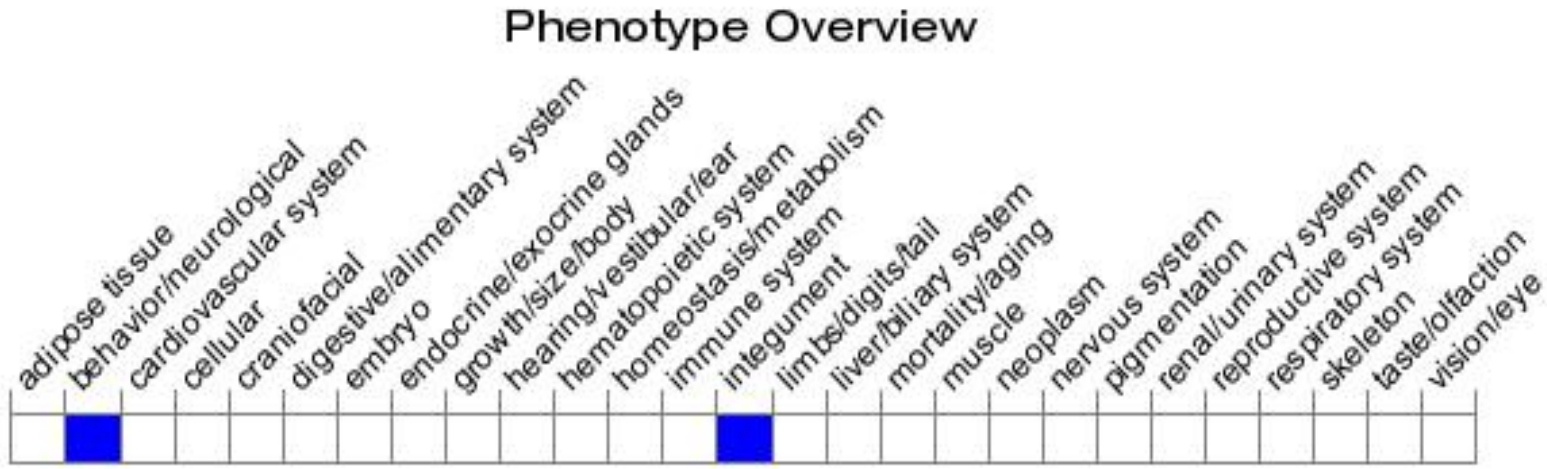
Genomic location distribution



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/>).

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

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