Exoc4 Cas9-KO Strategy

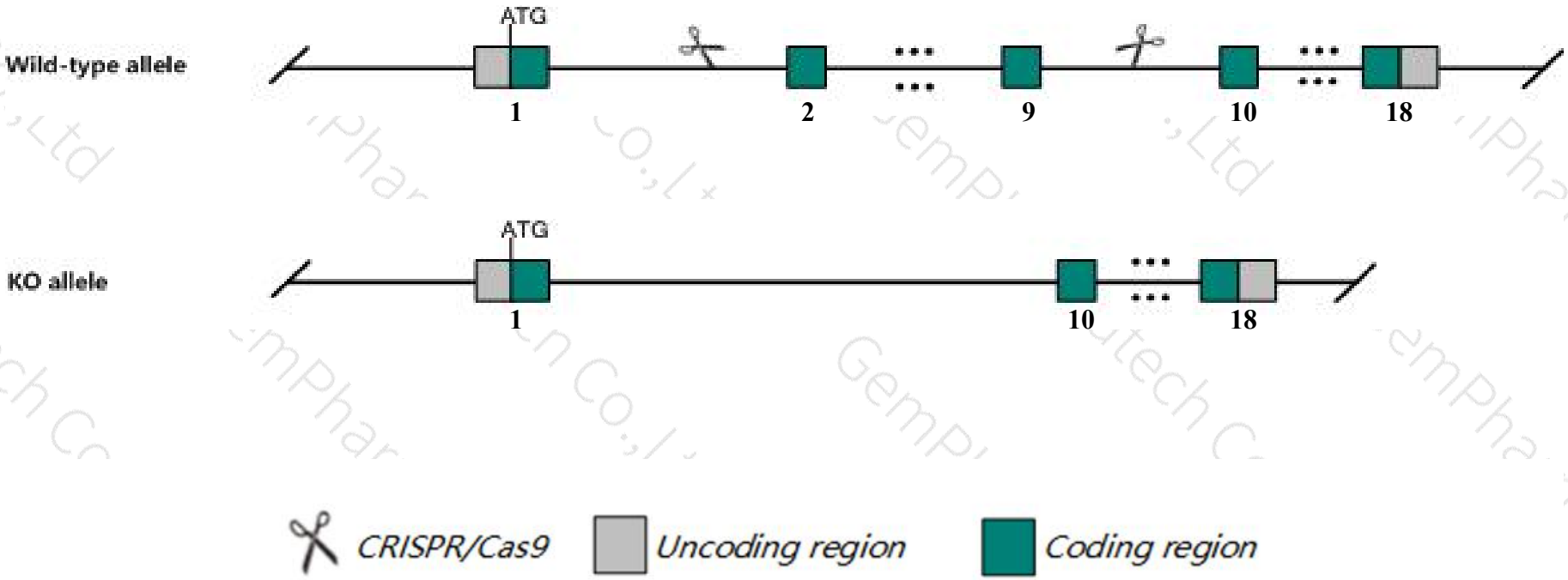
Designer: Shilei Zhu

Project Overview

Project Name	***Exoc4***
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Exoc4* gene. The schematic diagram is as follows:



Technical routes

➢ The *Exoc4* gene has 10 transcripts. According to the structure of *Exoc4* gene, exon2-exon9 of *Exoc4-201* (ENSMUST00000052266.14) transcript is recommended as the knockout region.The region contains 1334bp coding sequenc Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Exoc4* gene. The brief process is as follows: CRISPR/Cas9 system

Notice

- According to the existing MGI data,Mice homozygous for disruptions in this gene display embryonic abnormatlities. Gastrulation is not completed and mesoderm formation is abnormal. Death occurs before E10.5.

- The *Exoc4* 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）

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Exoc4 exocyst complex component 4 [Mus musculus (house mouse)]

Gene ID: 20336, updated on 19-Mar-2019

Summary

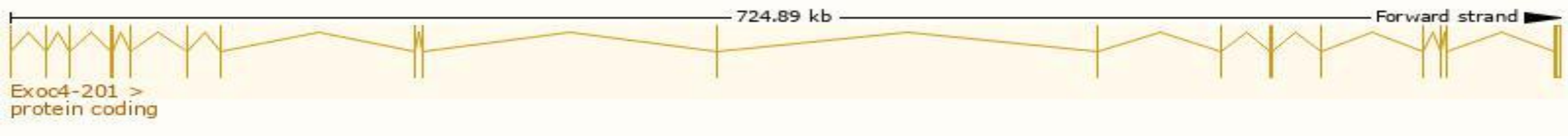
Official Symbol	Exoc4 provided by MGI
Official Full Name	exocyst complex component 4 provided by MGI
Primary source	MGI:MGI:1096376
See related	Ensembl:ENSMUSG00000029763
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	C78892, Sec8, Sec8l1
Expression	Ubiquitous expression in CNS E14 (RPKM 5.5), CNS E11.5 (RPKM 5.2) and 28 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

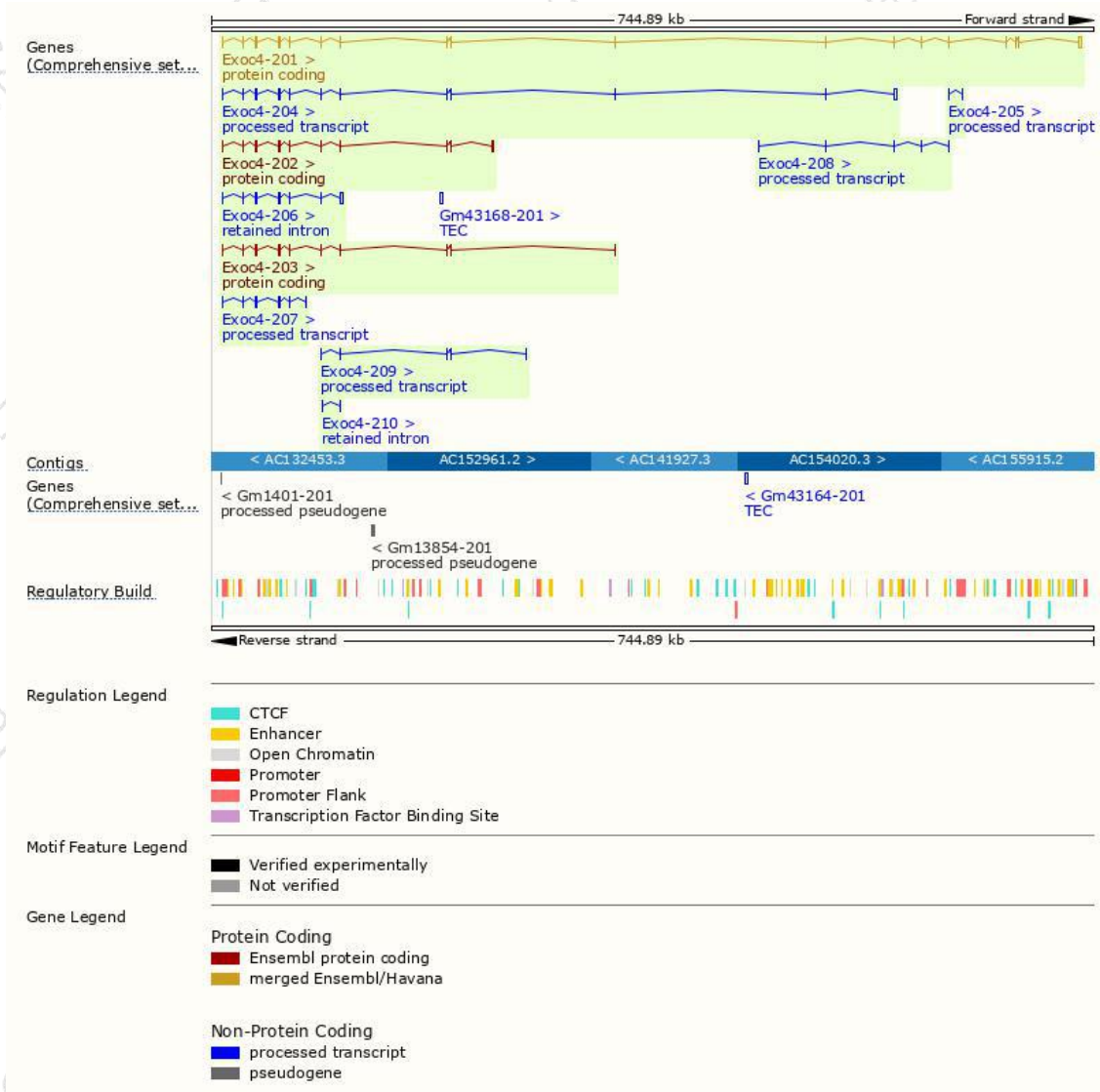
The gene has 10 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Exoc4-201	ENSMUST00000052266.14	4824	975aa	Protein coding	CCDS19987	Q35382	TSL:1 GENCODE basic APPRIS P1
Exoc4-202	ENSMUST00000090381.10	2598	522aa	Protein coding	CCDS85028	Q9CXE1	TSL:1 GENCODE basic
Exoc4-203	ENSMUST00000115080.1	2369	506aa	Protein coding	-	Q8C391	TSL:1 GENCODE basic
Exoc4-204	ENSMUST00000132842.7	3686	No protein	Processed transcript	-	-	TSL:1
Exoc4-207	ENSMUST00000139132.1	1060	No protein	Processed transcript	-	-	TSL:1
Exoc4-209	ENSMUST00000152835.1	932	No protein	Processed transcript	-	-	TSL:3
Exoc4-208	ENSMUST00000143190.1	641	No protein	Processed transcript	-	-	TSL:5
Exoc4-205	ENSMUST00000134653.1	384	No protein	Processed transcript	-	-	TSL:3
Exoc4-206	ENSMUST00000137043.7	4225	No protein	Retained intron	-	-	TSL:1
Exoc4-210	ENSMUST00000156207.1	411	No protein	Retained intron	-	-	TSL:3

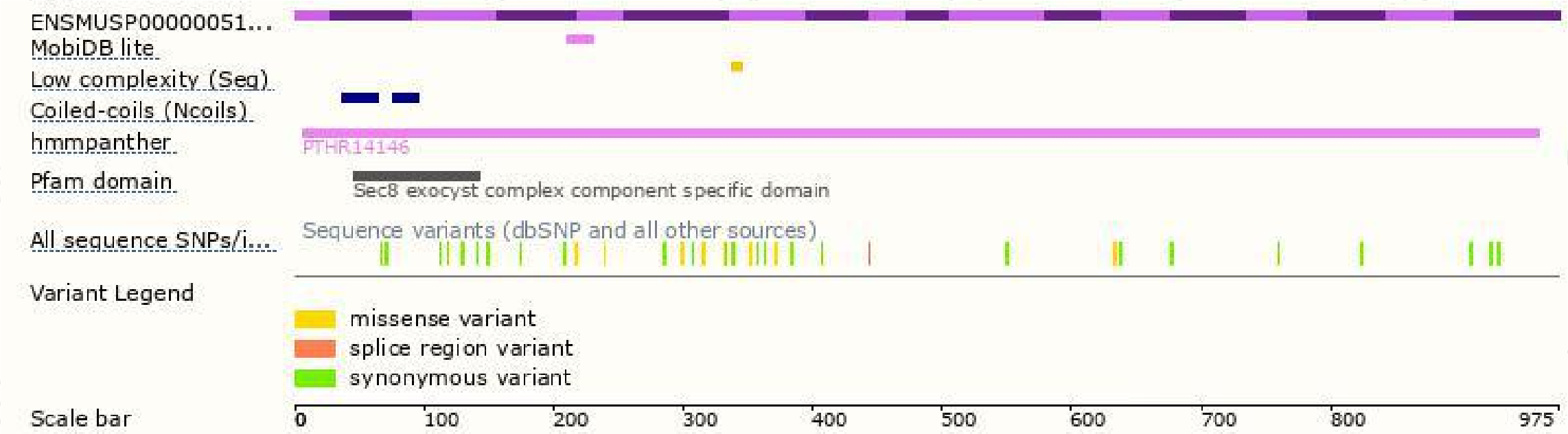
The strategy is based on the design of *Exoc4-201* transcript,The transcription is shown below



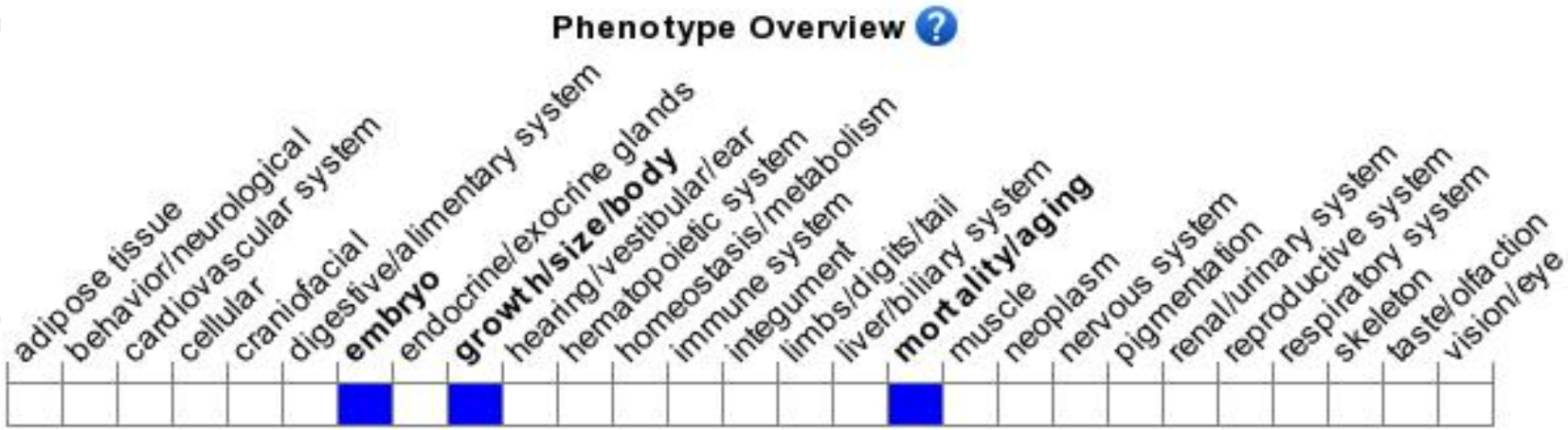
Genomic location distribution



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,Mice homozygous for disruptions in this gene display embryonic abnormatlities. Gastrulation is not completed and mesoderm formation is abnormal. Death occurs before E10.5.

集萃药康
GemPharmatech

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

Tel: 400-9660890

集萃药康生物科技
GemPharmatech Co.,Ltd