

Xpo7 Cas9-CKO Strategy

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Reviewer:

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Project Overview

Project Name

Xpo7

Project type

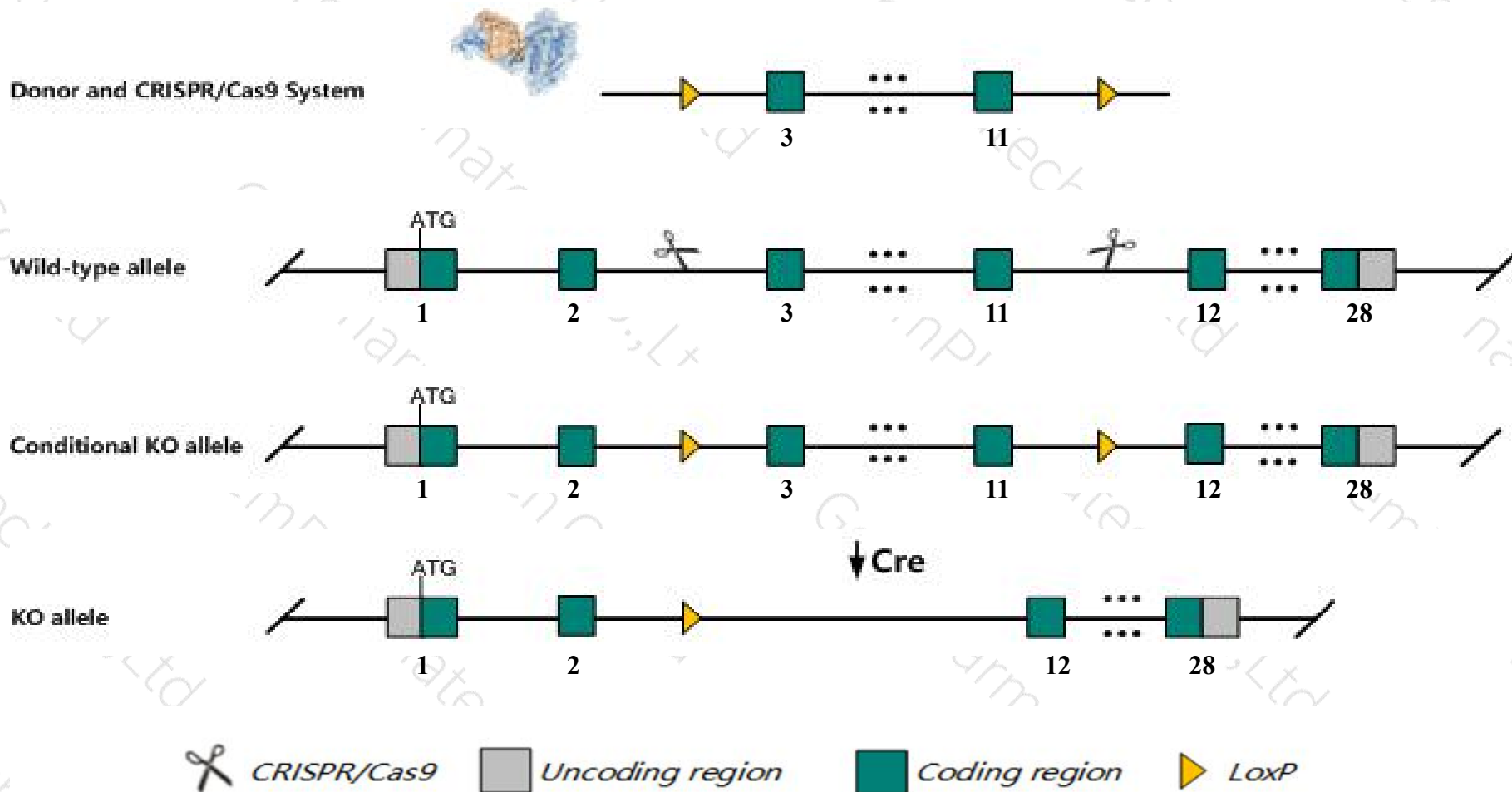
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Xpo7* gene. The schematic diagram is as follows:



- The *Xpo7* gene has 6 transcripts. According to the structure of *Xpo7* gene, exon3-exon11 of *Xpo7-201* (ENSMUST00000022696.7) transcript is recommended as the knockout region. The region contains 1112bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Xpo7* gene. The brief process is as follows: CRISPR/Cas9 system and Donor were microinjected into the fertilized eggs of C57BL/6JGpt mice. Fertilized eggs were transplanted to obtain positive F0 mice which were confirmed by PCR and sequencing. A stable F1 generation mouse model was obtained by mating positive F0 generation mice with C57BL/6JGpt mice.
- The flox mice will be knocked out after mating with mice expressing Cre recombinase, resulting in the loss of function of the target gene in specific tissues and cell types.

Notice

- The *Xpo7* gene is located on the Chr14. 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Xpo7 exportin 7 [Mus musculus (house mouse)]

Gene ID: 65246, updated on 31-Jan-2019

Summary



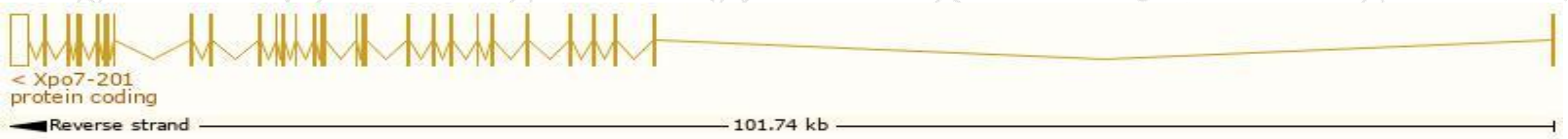
Official Symbol	Xpo7 provided by MGI
Official Full Name	exportin 7 provided by MGI
Primary source	MGI:MGI:1929705
See related	Ensembl:ENSMUSG00000022100
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	4930506C02Rik, BB164534, Ranbp16, exp7
Expression	Broad expression in liver E14.5 (RPKM 28.1), liver E14 (RPKM 26.2) and 26 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

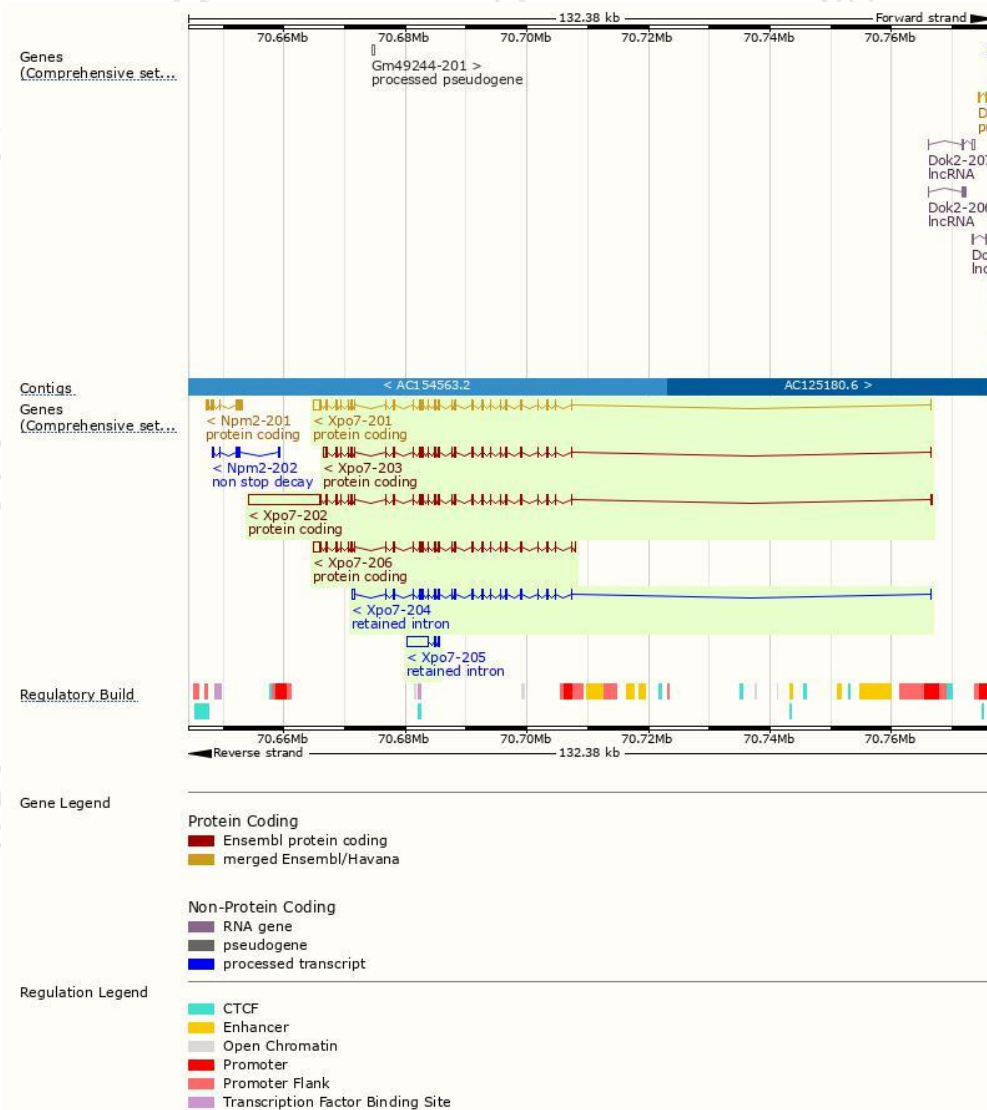
The gene has 6 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Xpo7-201	ENSMUST00000022696.7	4472	1087aa	Protein coding	CCDS36974	Q9EPK7	TSL:1 GENCODE basic APPRIS P2
Xpo7-202	ENSMUST00000167242.7	15121	1088aa	Protein coding	-	E9PUW7	TSL:5 GENCODE basic APPRIS ALT 1
Xpo7-206	ENSMUST00000228346.1	4491	1088aa	Protein coding	-	A0A2I3BQV5	GENCODE basic APPRIS ALT 1
Xpo7-203	ENSMUST00000226448.1	3663	1057aa	Protein coding	-	Q9EPK7	GENCODE basic
Xpo7-205	ENSMUST00000227550.1	3580	No protein	Retained intron	-	-	
Xpo7-204	ENSMUST00000226607.1	2769	No protein	Retained intron	-	-	

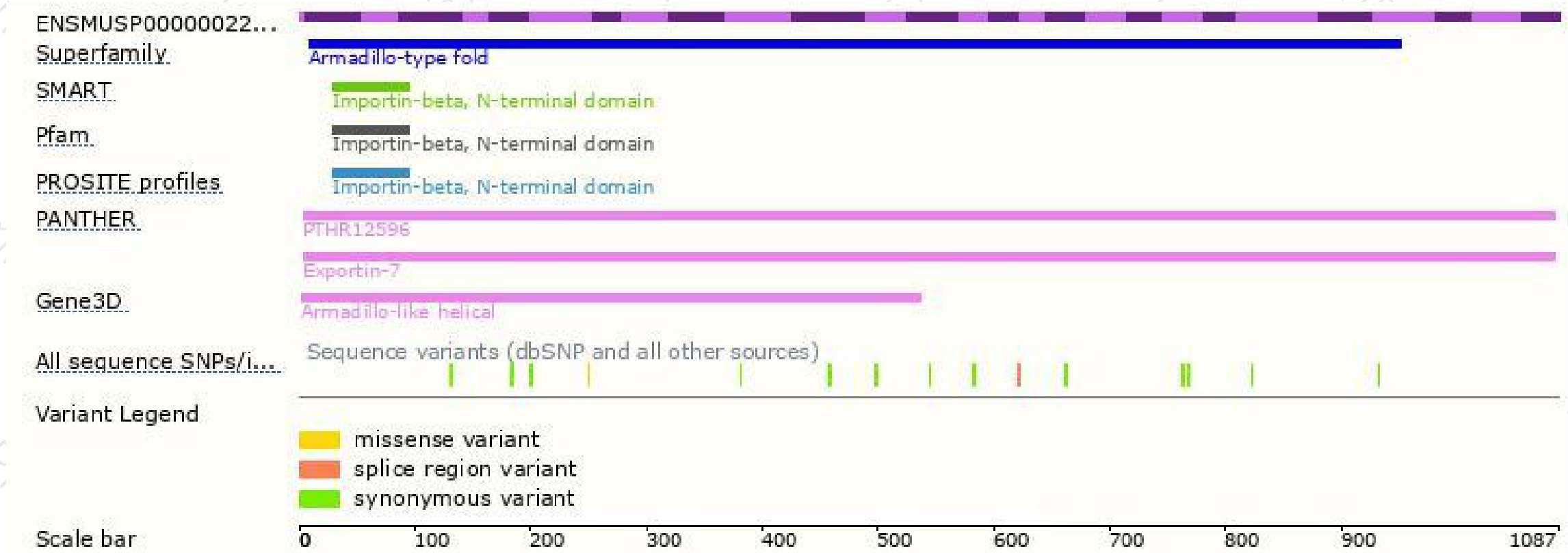
The strategy is based on the design of *Xpo7-201* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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