

Xpo6 Cas9-CKO Strategy

Designer: Xueting Zhang

Reviewer: Daohua Xu

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Project Overview

Project Name

Xpo6

Project type

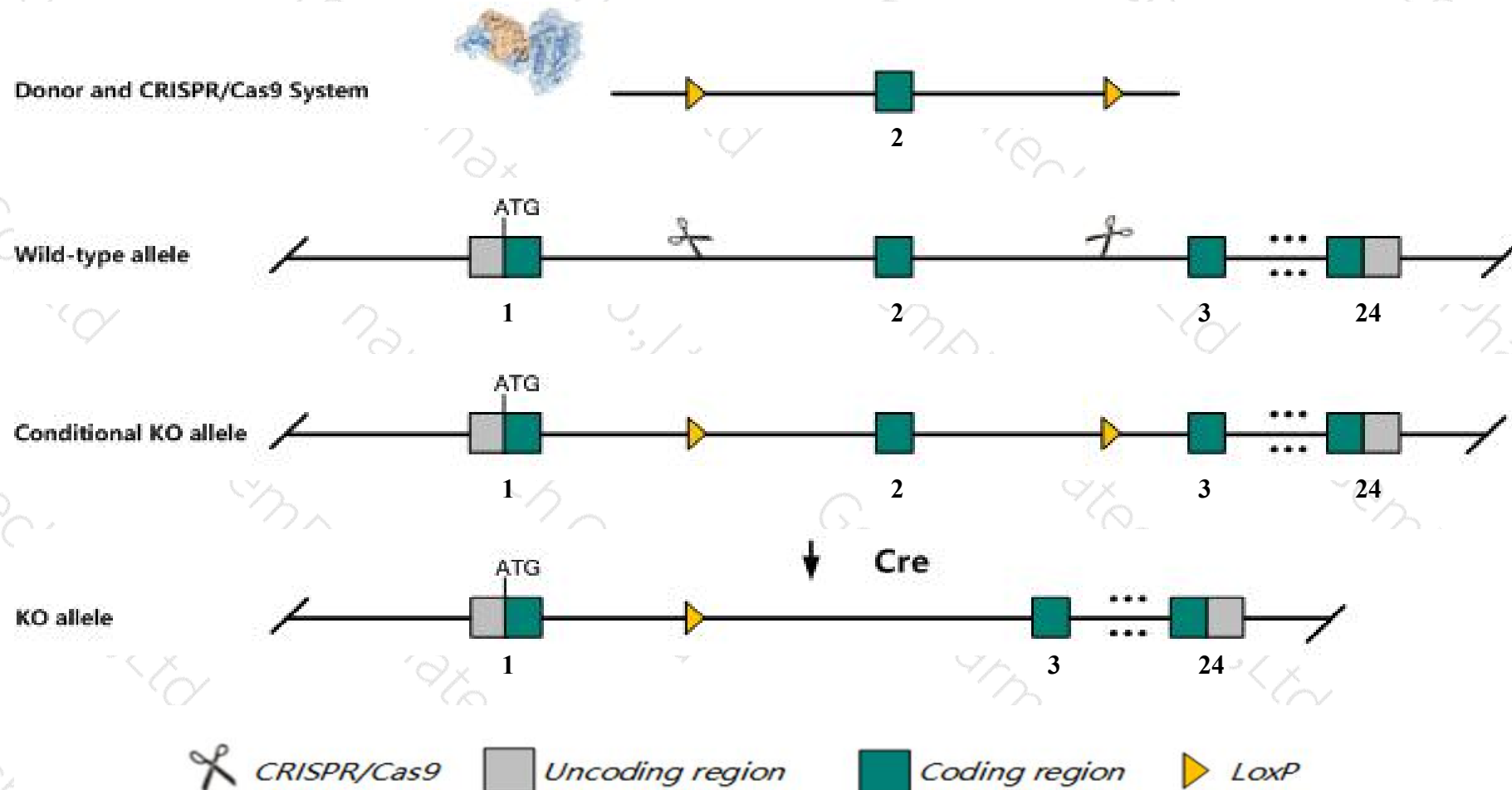
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Xpo6* gene. The schematic diagram is as follows:



Technical routes

- The *Xpo6* gene has 20 transcripts. According to the structure of *Xpo6* gene, exon2 of *Xpo6-213*(ENSMUST00000168189.7) transcript is recommended as the knockout region. The region contains 91bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Xpo6* 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.

- The *Xpo6* gene is located on the Chr7. 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.
- The effect on transcript *Xpo6*-202&203&205 is unknown.
- Transcript *Xpo6*-204&208&209&212&214&215&216&218&219&220 may not be affected.
- 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)

Xpo6 exportin 6 [Mus musculus (house mouse)]

Gene ID: 74204, updated on 13-Mar-2020

Summary



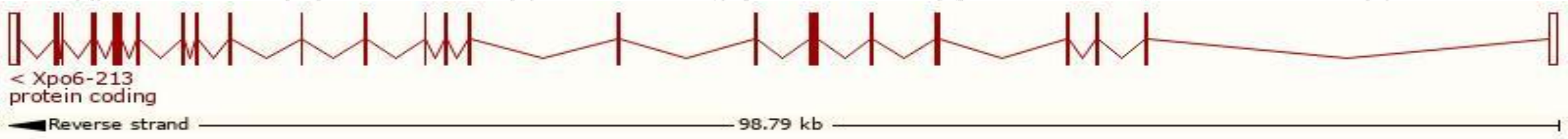
Official Symbol	Xpo6 provided by MGI
Official Full Name	exportin 6 provided by MGI
Primary source	MGI:MGI:2429950
See related	Ensembl:ENSMUSG000000000131
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	2610005L19Rik, AL022631, C230091E20Rik, R75304, Ranbp20, exp6, mKIAA0370
Expression	Ubiquitous expression in testis adult (RPKM 61.3), thymus adult (RPKM 29.9) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

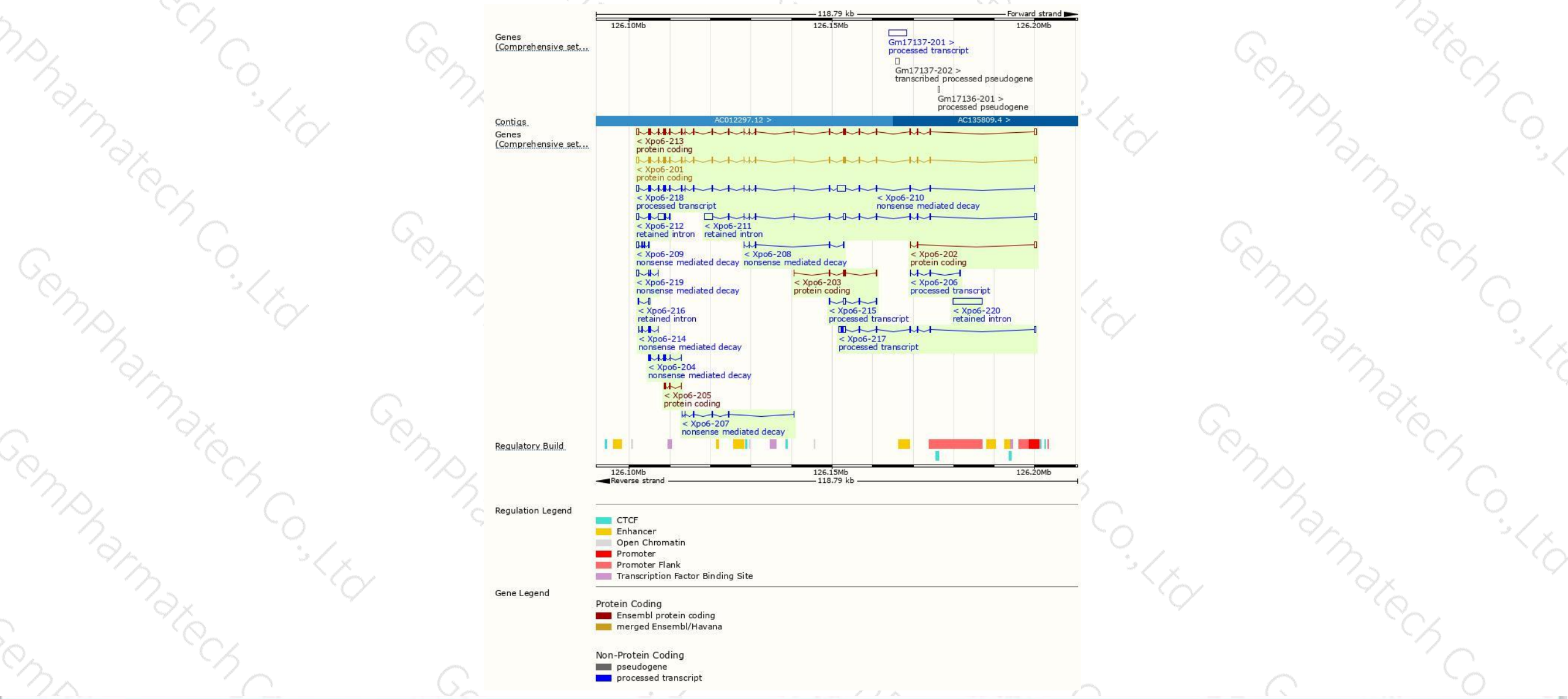
The gene has 20 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Xpo6-213	ENSMUST00000168189.7	4552	1125aa	Protein coding	CCDS80800	Q924Z6	TSL:1 GENCODE basic APPRIS ALT:1
Xpo6-201	ENSMUST0000009344.15	4455	1124aa	Protein coding	CCDS52396	Q924Z6	TSL:1 GENCODE basic APPRIS P3
Xpo6-203	ENSMUST00000164741.1	765	255aa	Protein coding	-	F6WSY2	CDS 5' and 3' incomplete TSL:5
Xpo6-202	ENSMUST00000163959.1	687	28aa	Protein coding	-	E9Q6V5	CDS 3' incomplete TSL:3
Xpo6-205	ENSMUST00000165660.1	403	135aa	Protein coding	-	F6XQN1	CDS 5' and 3' incomplete TSL:5
Xpo6-204	ENSMUST00000165608.1	984	87aa	Nonsense mediated decay	-	F7B8F0	CDS 5' incomplete TSL:5
Xpo6-209	ENSMUST00000166719.7	980	38aa	Nonsense mediated decay	-	F6ZUE3	CDS 5' incomplete TSL:3
Xpo6-219	ENSMUST00000171861.7	938	71aa	Nonsense mediated decay	-	F6YJ47	CDS 5' incomplete TSL:5
Xpo6-207	ENSMUST00000166538.1	686	65aa	Nonsense mediated decay	-	F6U927	CDS 5' incomplete TSL:5
Xpo6-208	ENSMUST00000166540.7	609	142aa	Nonsense mediated decay	-	F6Z111	CDS 5' incomplete TSL:5
Xpo6-214	ENSMUST00000168564.1	546	132aa	Nonsense mediated decay	-	F6Y2I6	CDS 5' incomplete TSL:3
Xpo6-210	ENSMUST00000167147.1	332	35aa	Nonsense mediated decay	-	E9Q081	TSL:5
Xpo6-218	ENSMUST00000170675.7	5028	No protein	Processed transcript	-	-	TSL:5
Xpo6-217	ENSMUST00000169059.7	2085	No protein	Processed transcript	-	-	TSL:5
Xpo6-215	ENSMUST00000168649.7	791	No protein	Processed transcript	-	-	TSL:3
Xpo6-206	ENSMUST00000166368.1	370	No protein	Processed transcript	-	-	TSL:3
Xpo6-220	ENSMUST00000206784.1	7335	No protein	Retained intron	-	-	TSL:NA
Xpo6-211	ENSMUST00000167268.7	4263	No protein	Retained intron	-	-	TSL:1
Xpo6-212	ENSMUST00000167315.7	2806	No protein	Retained intron	-	-	TSL:1
Xpo6-216	ENSMUST00000168933.1	640	No protein	Retained intron	-	-	TSL:1

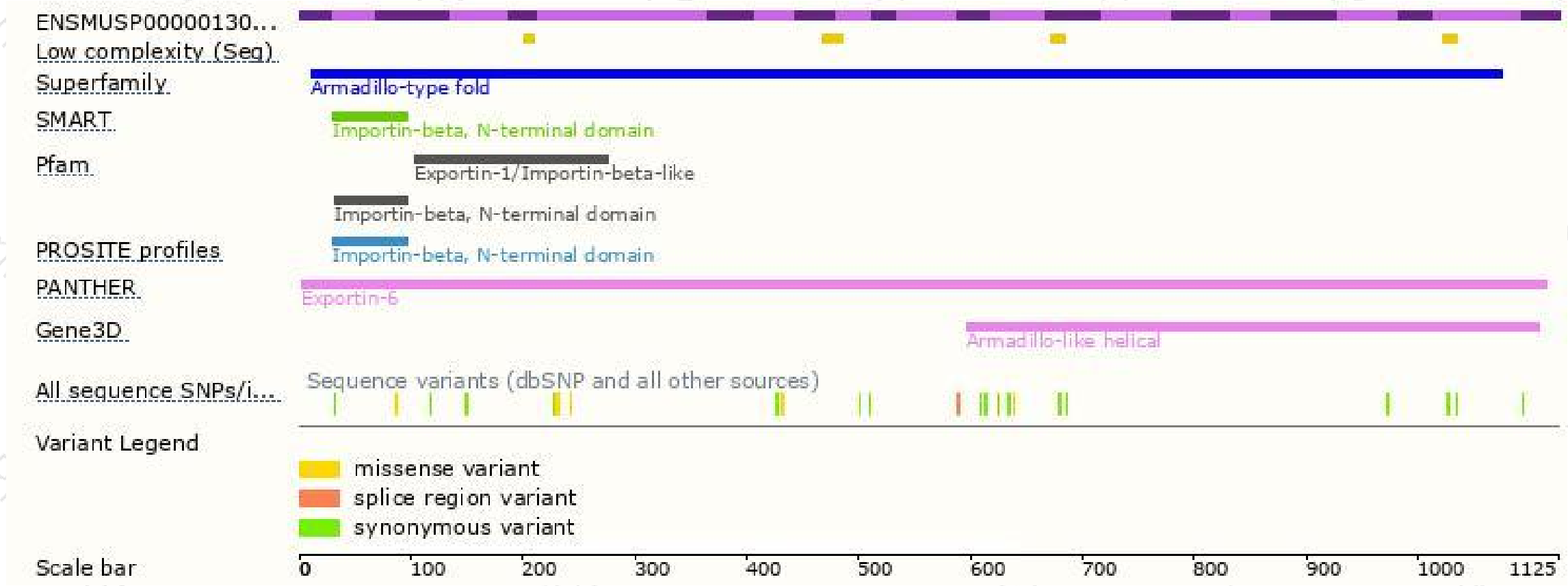
The strategy is based on the design of *Xpo6-213* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

Tel: 400-9660890

