

Vps8 Cas9-KO Strategy

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Project Overview

Project Name

Vps8

Project type

Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Vps8* gene. The schematic diagram is as follows:



Technical routes

- The *Vps8* gene has 16 transcripts. According to the structure of *Vps8* gene, exon4-exon35 of *Vps8*-204(ENSMUST00000117598.7) transcript is recommended as the knockout region. The region contains 2807bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Vps8* gene. The brief process is as follows: CRISPR/Cas9 system 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 Vsp8-210 transcript was not damaged.
- The *Vps8* gene is located on the Chr16. 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)

Vps8 VPS8 CORVET complex subunit [Mus musculus (house mouse)]

Gene ID: 209018, updated on 13-Mar-2020

Summary



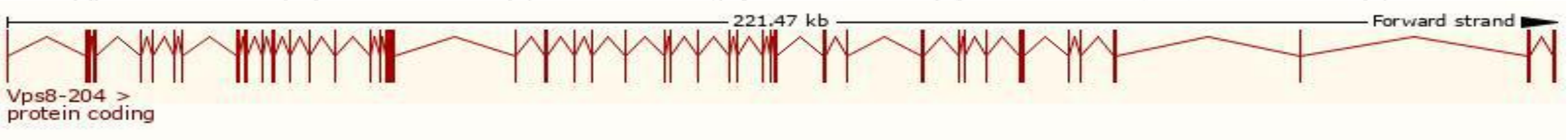
Official Symbol	Vps8 provided by MGI
Official Full Name	VPS8 CORVET complex subunit provided by MGI
Primary source	MGI:MGI:2146407
See related	Ensembl:ENSMUSG00000033653
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	AI315068, AU040738, mKIAA0804
Expression	Ubiquitous expression in CNS E18 (RPKM 7.3), cortex adult (RPKM 6.6) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

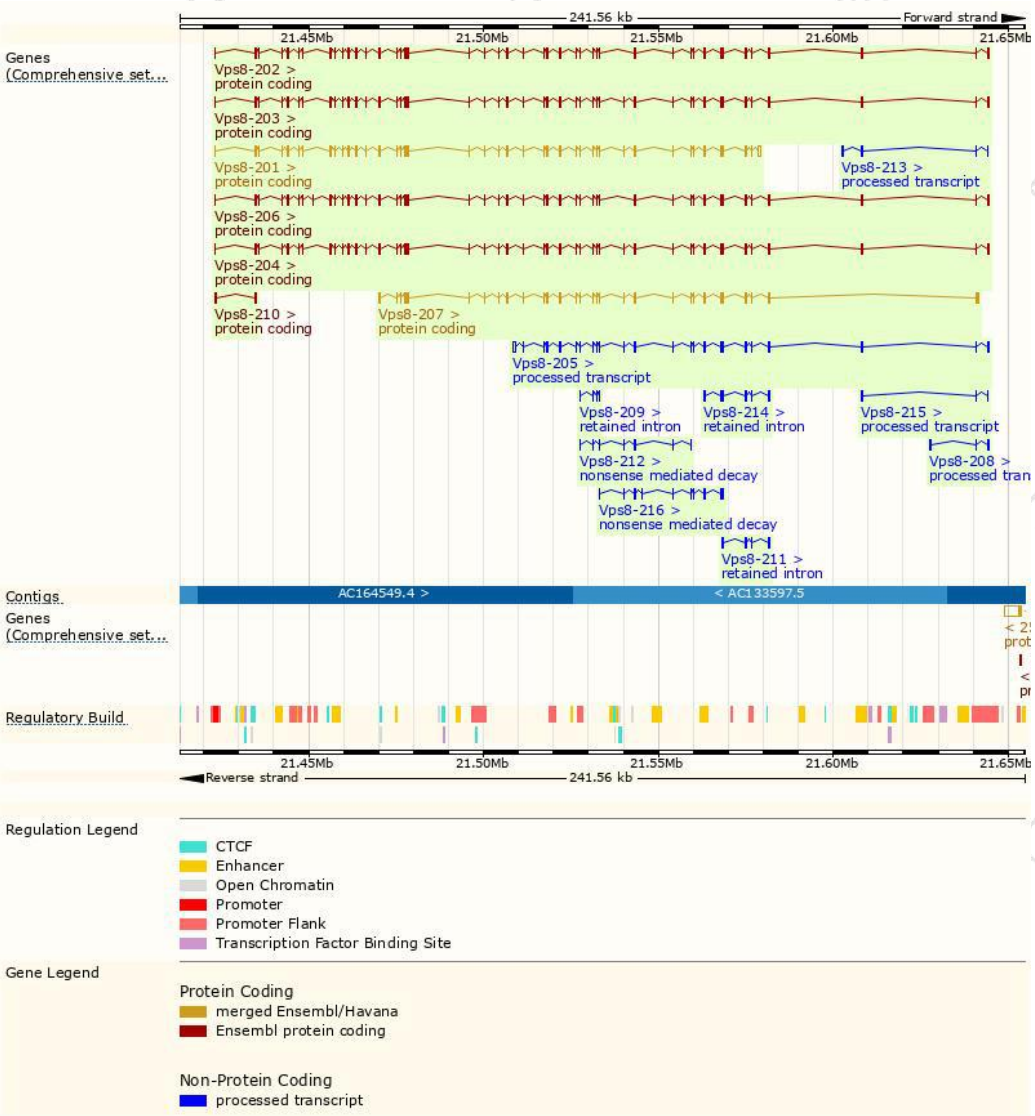
The gene has 16 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Vps8-204	ENSMUST00000117598.7	4935	1427aa	Protein coding	CCDS70701	Q0P5W1	TSL:1 GENCODE basic APPRIS P2
Vps8-206	ENSMUST00000118923.7	4838	1399aa	Protein coding	CCDS70700	Q0P5W1	TSL:5 GENCODE basic
Vps8-203	ENSMUST00000115397.7	5032	1429aa	Protein coding	-	D3YUP0	TSL:5 GENCODE basic APPRIS ALT1
Vps8-201	ENSMUST00000096191.10	4952	1292aa	Protein coding	-	Q0P5W1	TSL:1 GENCODE basic
Vps8-202	ENSMUST00000096192.11	4942	1399aa	Protein coding	-	F8WI64	TSL:5 GENCODE basic
Vps8-207	ENSMUST00000125487.7	3350	964aa	Protein coding	-	F6ZLN8	CDS 5' incomplete TSL:1
Vps8-210	ENSMUST00000139473.1	461	21aa	Protein coding	-	D3Z2G2	CDS 3' incomplete TSL:3
Vps8-216	ENSMUST00000232357.1	804	118aa	Nonsense mediated decay	-	A0A338P780	CDS 5' incomplete
Vps8-212	ENSMUST00000156580.1	614	75aa	Nonsense mediated decay	-	F7A250	CDS 5' incomplete TSL:2
Vps8-205	ENSMUST00000118138.7	3060	No protein	Processed transcript	-	-	TSL:1
Vps8-213	ENSMUST00000231224.1	728	No protein	Processed transcript	-	-	
Vps8-208	ENSMUST00000127903.1	722	No protein	Processed transcript	-	-	TSL:3
Vps8-215	ENSMUST00000232132.1	401	No protein	Processed transcript	-	-	
Vps8-214	ENSMUST00000231484.1	724	No protein	Retained intron	-	-	
Vps8-211	ENSMUST00000150765.1	525	No protein	Retained intron	-	-	TSL:1
Vps8-209	ENSMUST00000134650.1	398	No protein	Retained intron	-	-	TSL:2

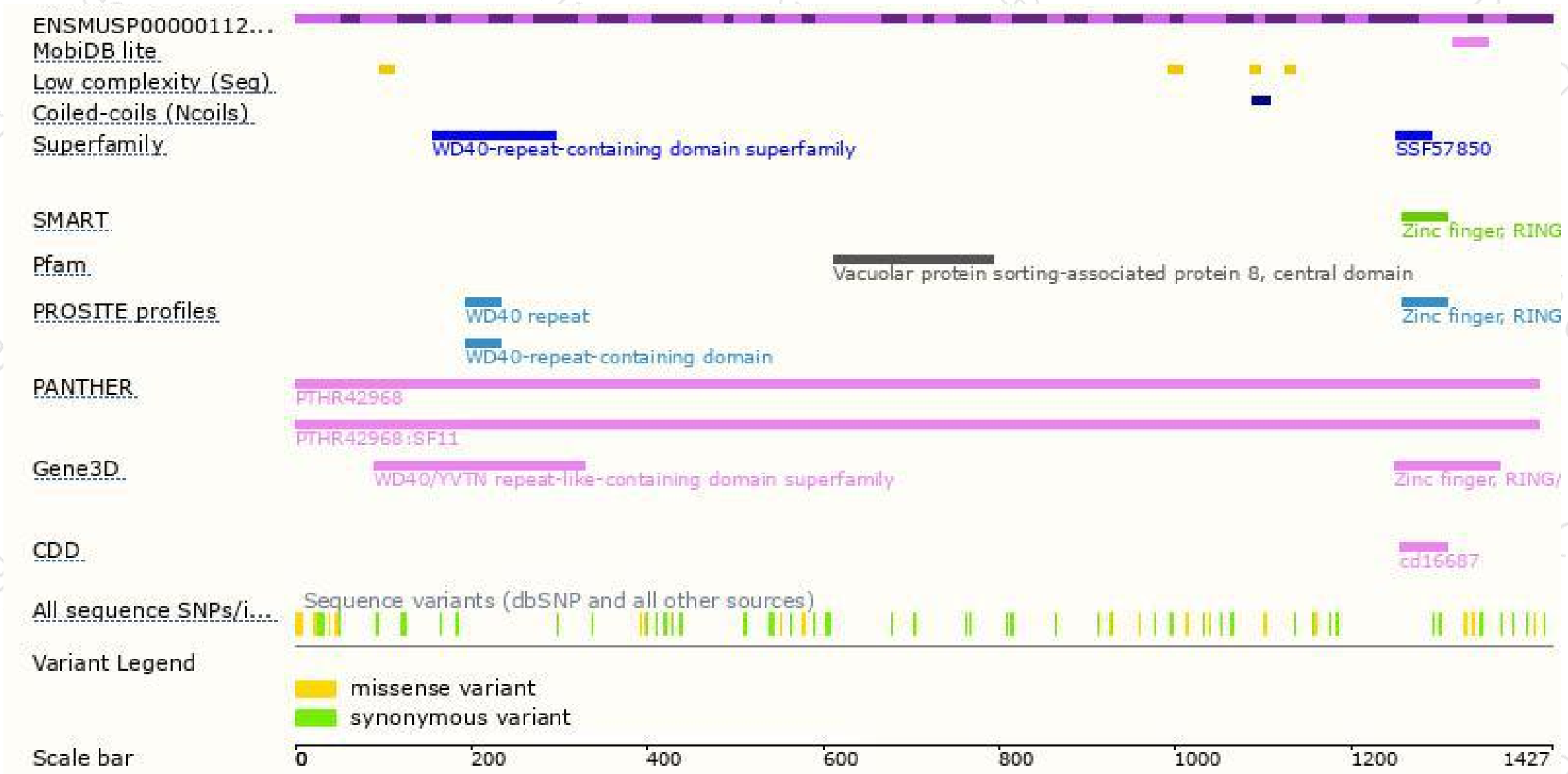
The strategy is based on the design of *Vps8-204* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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