

Vcpip1 Cas9-CKO Strategy

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Reviewer:

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Design Date:

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Project Overview

Project Name

Vcpip1

Project type

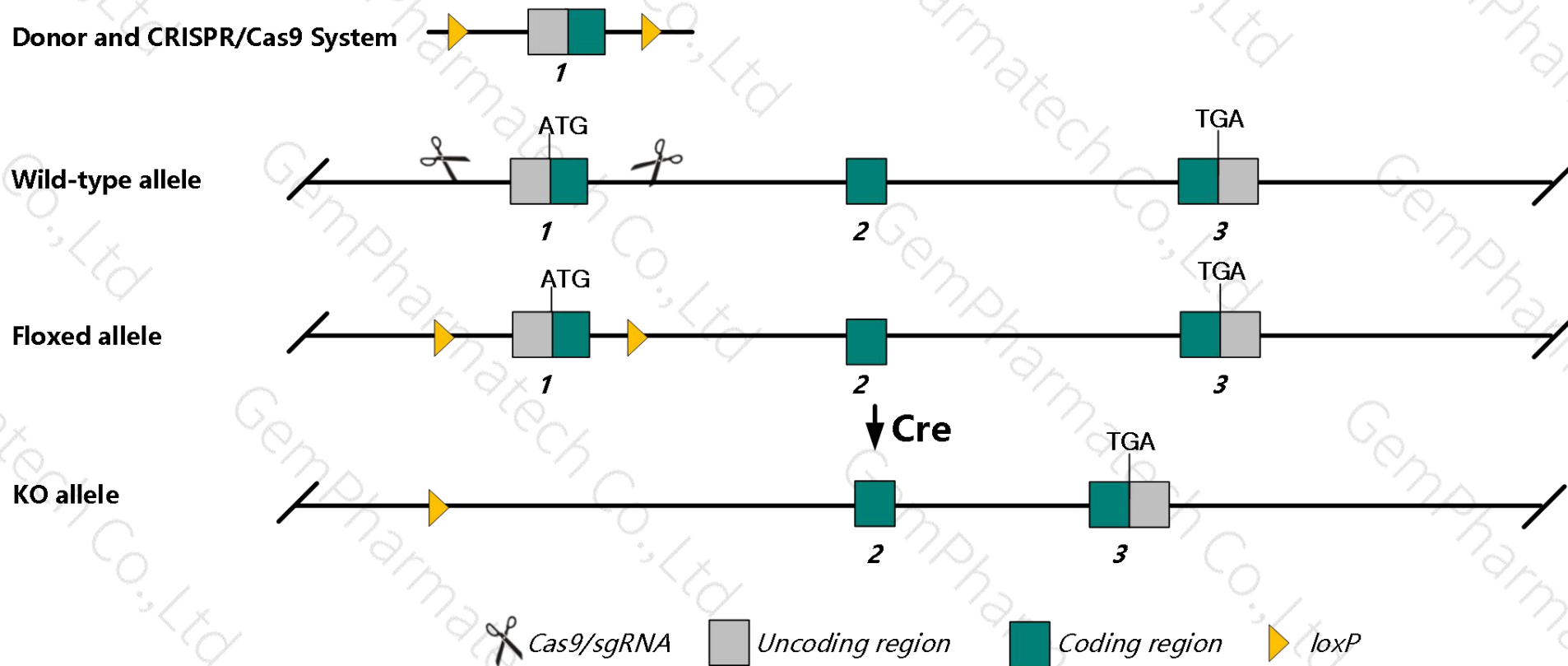
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Vcpip1* gene. The schematic diagram is as follows:



- The *Vcpipl* gene has 1 transcript. According to the structure of *Vcpipl* gene, exon1 of *Vcpipl*-201 (ENSMUST00000057438.6) transcript is recommended as the knockout region. The region contains ATG start coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Vcpipl* gene. The brief process is as follows: gRNA was transcribed in vitro, donor was constructed. Cas9, gRNA 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 KO region is close to 5'UTR region of the *1700034P13Rik* gene. Knockout the region may affect the function of *1700034P13Rik* gene.
- The *Vcpip1* 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 loxp insertion on gene transcription, RNA splicing and protein translation cannot be predicted at existing technological level.

Gene information (NCBI)

Vcpip1 valosin containing protein (p97)/p47 complex interacting protein 1 [*Mus musculus* (house mouse)]

Gene ID: 70675, updated on 12-Aug-2019

Summary

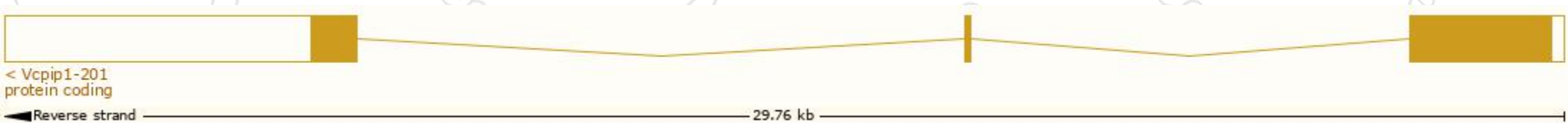
Official Symbol	Vcpip1 provided by MGI
Official Full Name	valosin containing protein (p97)/p47 complex interacting protein 1 provided by MGI
Primary source	MGI:MGI:1917925
See related	Ensembl:ENSMUSG00000045210
Gene type	protein coding
RefSeq status	REVIEWED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	VCIP135; mKIAA1850; 4932442A08; 5730421J18Rik; 5730538E15Rik
Summary	This gene encodes a deubiquitinating enzyme that interacts with valosin containing protein p97 and plays a role in the assembly of Golgi apparatus during mitosis. [provided by RefSeq, Dec 2014]
Expression	Ubiquitous expression in placenta adult (RPKM 3.5), frontal lobe adult (RPKM 3.2) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

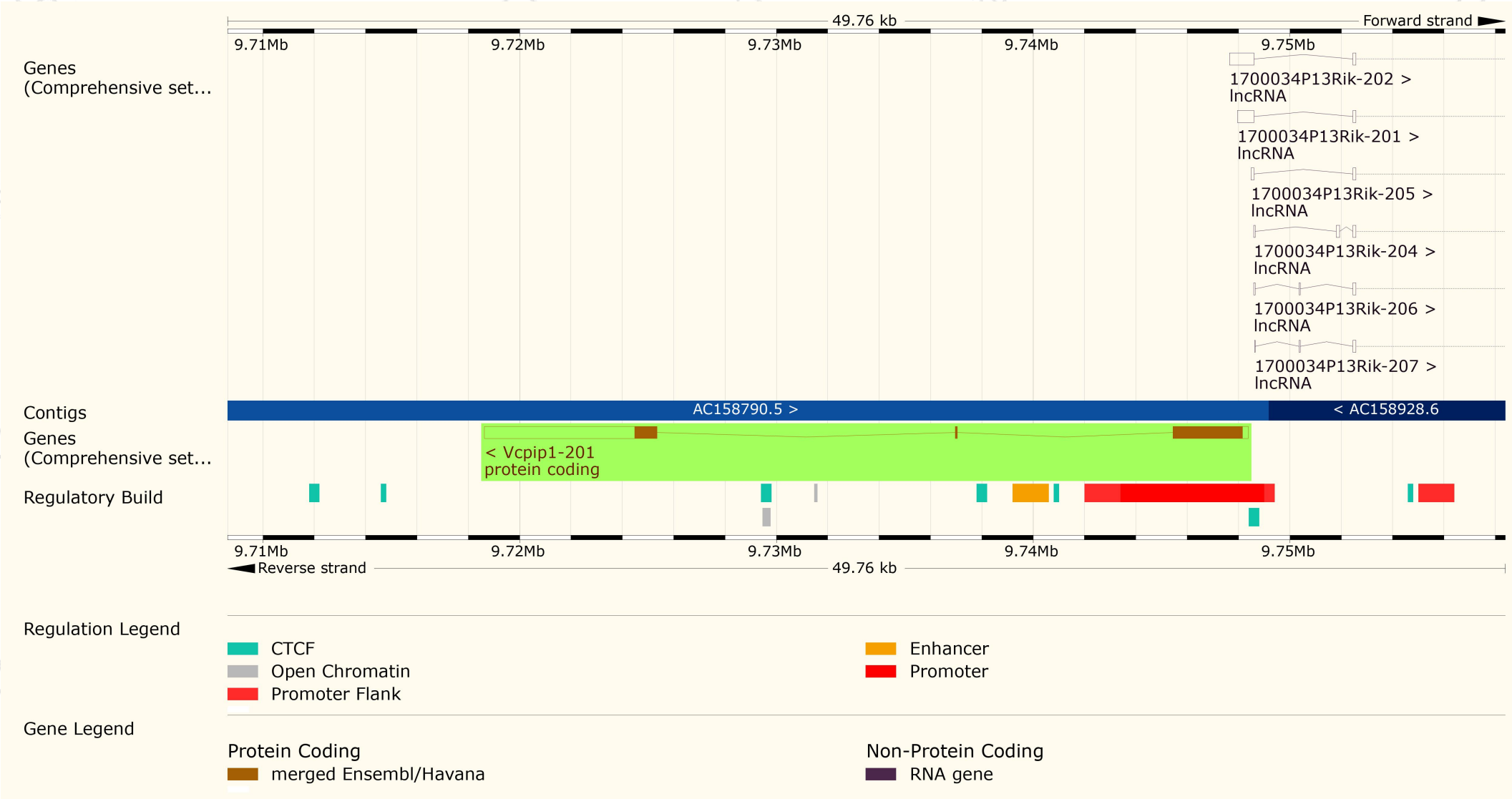
The gene has 1 transcript, the transcript is shown below:

Name ▲	Transcript ID	bp	Protein	Translation ID	Biotype	CCDS	UniProt	Flags
Vcpip1-201	ENSMUST00000057438.6	9749	1220aa	ENSMUSP00000051248.6	Protein coding	CCDS14814	A0A0R4J0M9	TSL:1 Gencode basic APPRIS P1

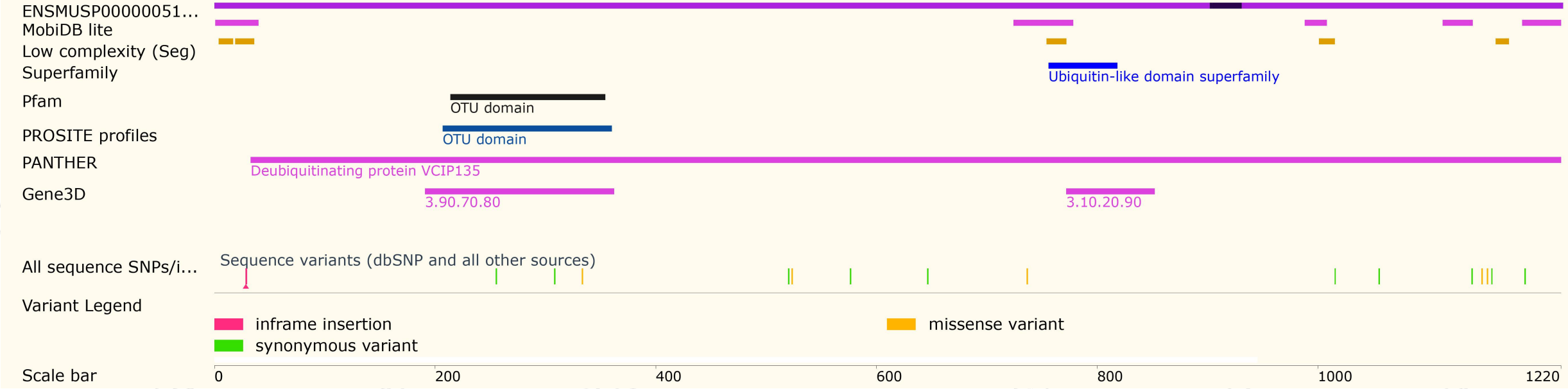
The strategy is based on the design of *Vcpip1-201* transcript, The transcription is shown below



Genomic location distribution



Protein domain



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

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