

Washc2 Cas9-KO Strategy

Designer:

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Project Overview

Project Name

Washc2

Project type

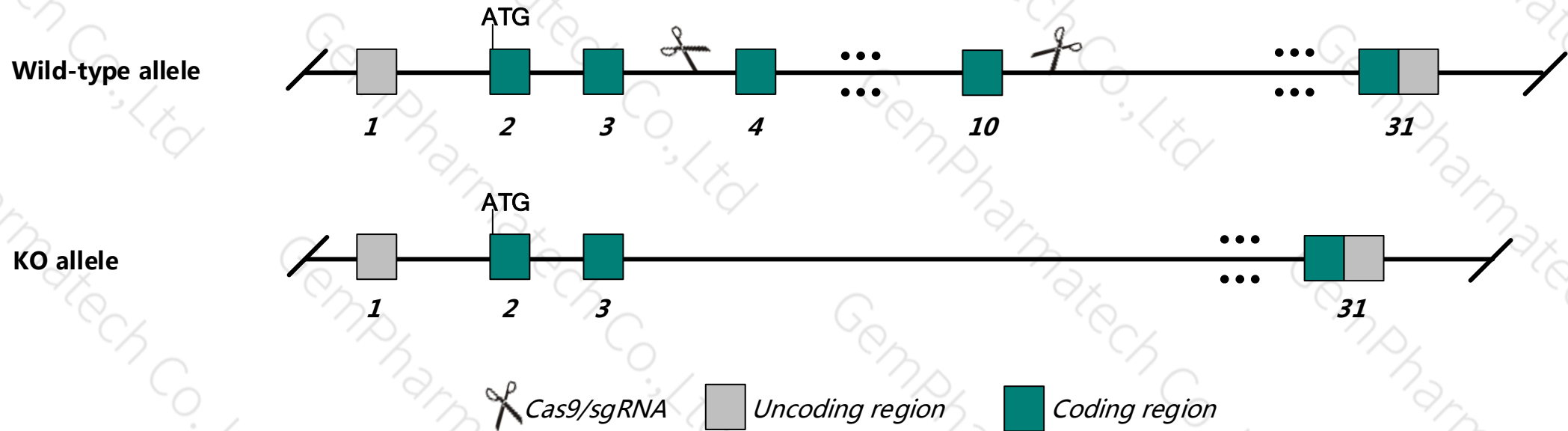
Cas9-KO

Strain background

C57BL/6JGpt

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Washc2* gene. The schematic diagram is as follows:



Technical routes

- The *Washc2* gene has 13 transcripts. According to the structure of *Washc2* gene, exon4-exon10 of *Washc2*-201 (ENSMUST00000036759.10) transcript is recommended as the knockout region. The region contains 631bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Washc2* gene. The brief process is as follows: sgRNA was transcribed in vitro. Cas9, sgRNA 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 *Washc2* 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)

Washc2 WASH complex subunit 2` [*Mus musculus* (house mouse)]

Gene ID: 28006, updated on 2-Oct-2018

Summary

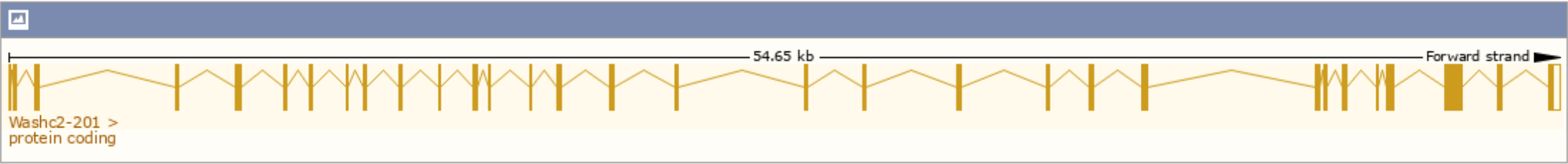
Official Symbol	Washc2 provided by MGI
Official Full Name	WASH complex subunit 2` provided by MGI
Primary source	MGI:MGI:106463
See related	Ensembl:ENSMUSG00000024104 Vega:OTTMUSG00000056774
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Fam21; D6Wsu116e; A130095H06; C530005J20Rik
Expression	Ubiquitous expression in cerebellum adult (RPKM 42.3), CNS E11.5 (RPKM 17.3) and 26 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

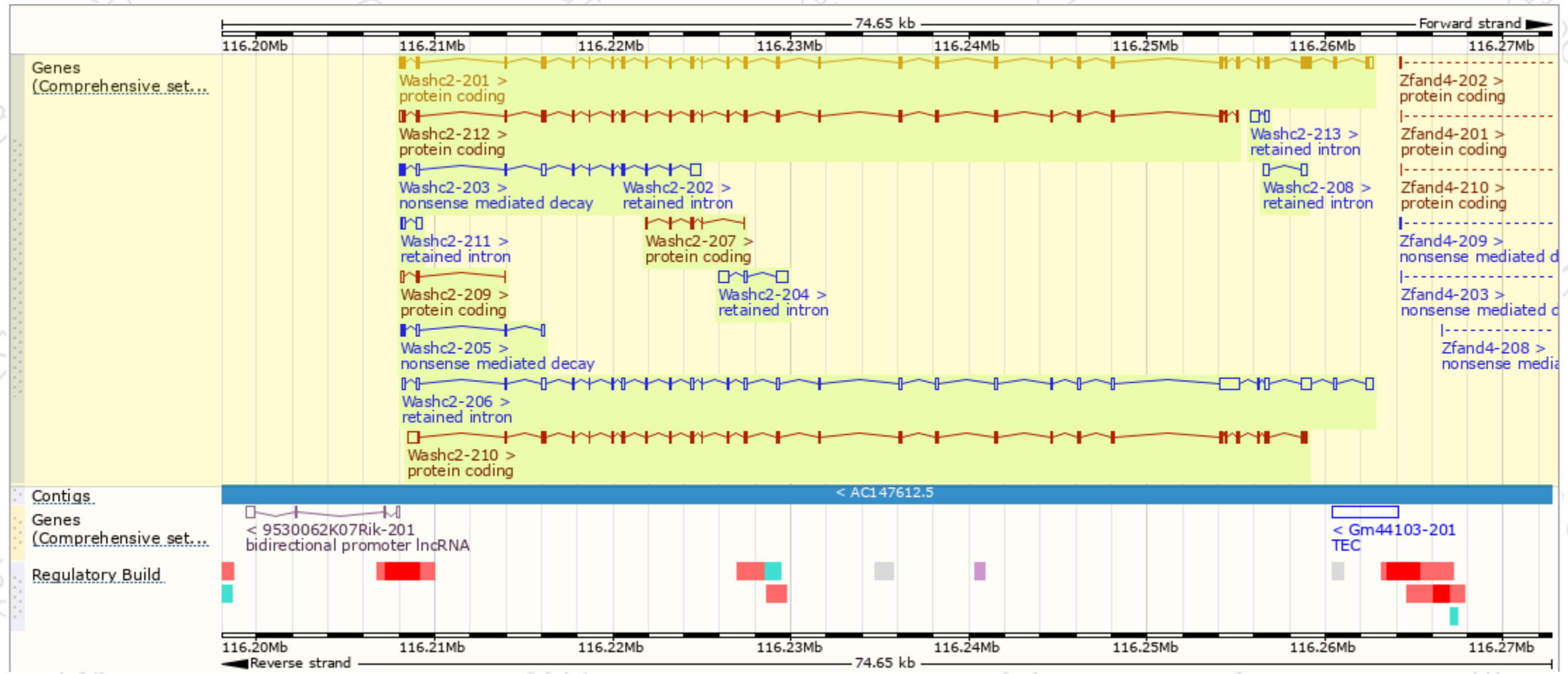
The gene has 13 transcripts, and all transcripts are shown below:

Show/hide columns (1 hidden) Filter								
Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	RefSeq	Flags
Washc2-201	ENSMUST00000036759.10	4307	1334aa	Protein coding	CCDS20450	Q6PGL7	NM_026585 NP_080861	TSL:1 GENCODE basic APPRIS P1
Washc2-210	ENSMUST00000204283.2	3728	1051aa	Protein coding	-	A0A0N4SUJ0	-	CDS 3' incomplete TSL:5
Washc2-212	ENSMUST00000204476.2	2861	900aa	Protein coding	-	A0A0N4SV74	-	CDS 3' incomplete TSL:1
Washc2-209	ENSMUST00000204051.1	340	18aa	Protein coding	-	A0A0N4SUQ0	-	CDS 3' incomplete TSL:2
Washc2-207	ENSMUST00000203928.1	324	108aa	Protein coding	-	A0A0N4SVK9	-	CDS 5' and 3' incomplete TSL:1
Washc2-203	ENSMUST00000203286.2	812	57aa	Nonsense mediated decay	-	A0A0N4SVI5	-	TSL:5
Washc2-205	ENSMUST00000203523.2	523	57aa	Nonsense mediated decay	-	A0A0N4SVI5	-	TSL:3
Washc2-206	ENSMUST00000203802.2	4946	No protein	Retained intron	-	-	-	TSL:5
Washc2-204	ENSMUST00000203297.1	1284	No protein	Retained intron	-	-	-	TSL:1
Washc2-202	ENSMUST00000203161.1	735	No protein	Retained intron	-	-	-	TSL:3
Washc2-213	ENSMUST00000204495.1	697	No protein	Retained intron	-	-	-	TSL:3
Washc2-208	ENSMUST00000203980.1	599	No protein	Retained intron	-	-	-	TSL:2
Washc2-211	ENSMUST00000204446.1	525	No protein	Retained intron	-	-	-	TSL:2

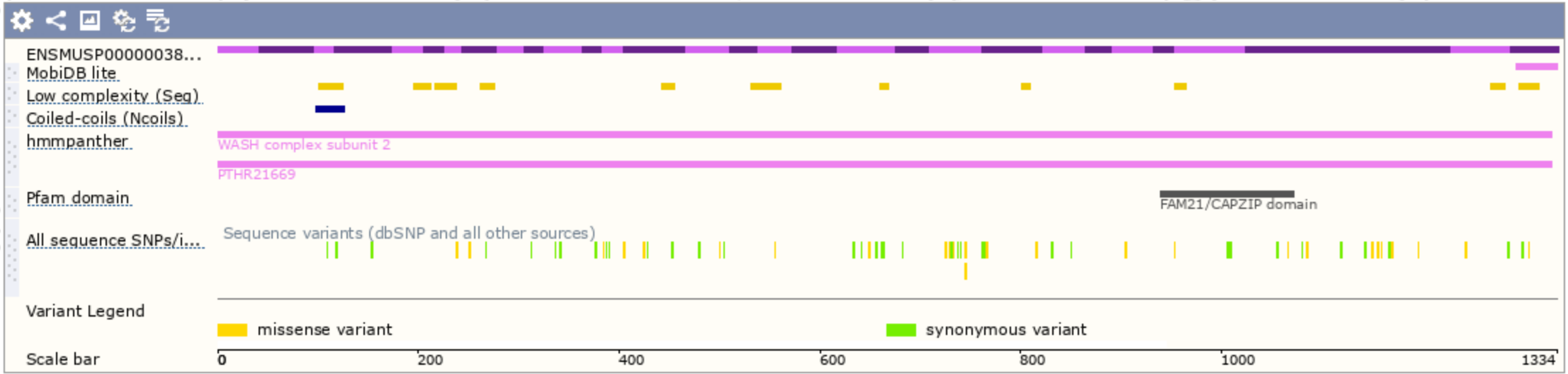
The strategy is based on the design of Washc2-201 transcript, The transcription is shown below



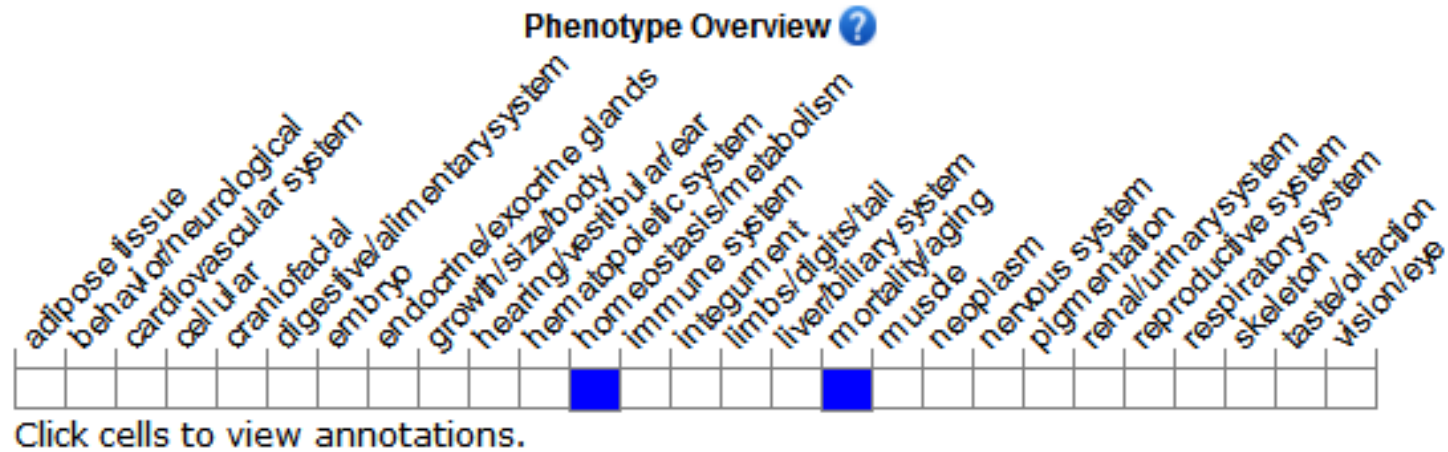
Genomic location distribution



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/>).

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