Vps11 Cas9-KO *Strategy*

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Project Overview

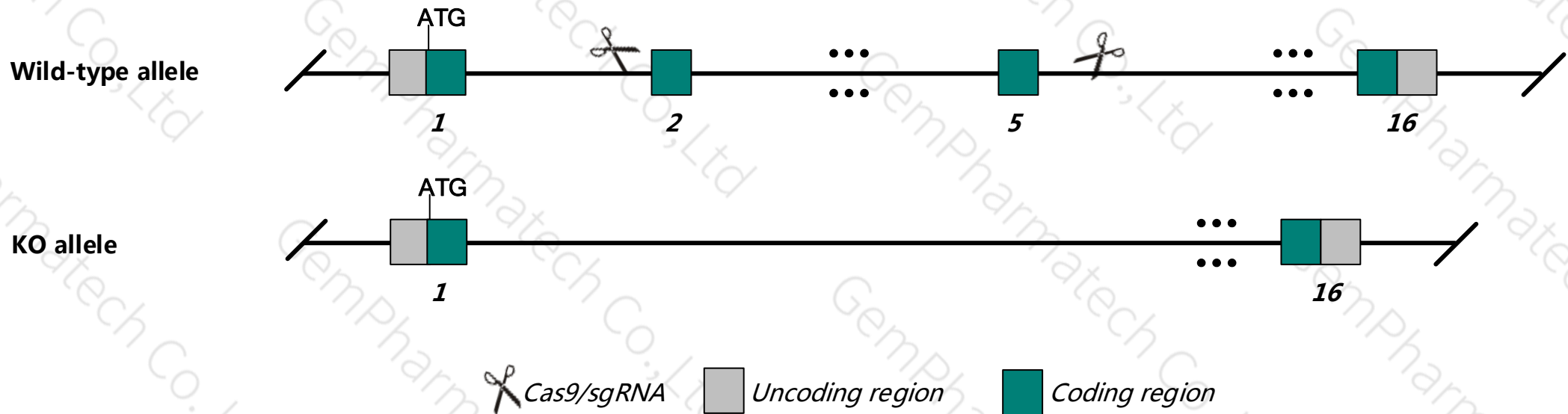|	
Project Name	*Vps11*
Project type	**Cas9-KO**
Strain background	**C57BL/6JGpt**

Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Vps11* gene. The schematic diagram is as follows:

Technical routes

➢ The *Vps11* gene has 6 transcripts.According to the structure of *Vps11* gene, exon2-exon5 of *Vps11*-201 (ENSMUST00000034644.9) transcript is recommended as the knockout region.The region contains 697bp coding sequence.Knock out the region will result in disruption of protein function.

➢ In this project we use CRISPR/Cas9 technology to modify *Vps11* 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.

Notice

➢ The *Vps11* gene is located on the Chr9. 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）

Vps11 VPS11, CORVET/HOPS core subunit [*Mus musculus* (house mouse)]

Gene ID: 71732, updated on 9-Sep-2018

▲ Summary

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Official Symbol	Vps11 provided by MGI
Official Full Name	VPS11, CORVET/HOPS core subunit provided by MGI
Primary source	MGI:MGI:1918982
See related	Ensembl:ENSMUSG00000032127 Vega:OTTMUSG00000063261
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	1200011A11Rik
Expression	Ubiquitous expression in genital fat pad adult (RPKM 17.1), adrenal adult (RPKM 17.0) and 28 other tissues See more
Orthologs	human all

Transcript information（Ensembl）

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

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	RefSeq	Flags
Vps11-201	ENSMUST00000034644.9	3536	941aa	Protein coding	CCDS40599	Q91W86	NM_027889 NP_082165	TSL:1 GENCODE basic APPRIS P1
Vps11-204	ENSMUST00000214460.1	745	249aa	Protein coding	-	A0A1L1SV27	-	CDS 5' and 3' incomplete TSL:3
Vps11-205	ENSMUST00000214510.1	3812	407aa	Nonsense mediated decay	-	A0A1L1SRH3	-	TSL:1
Vps11-203	ENSMUST00000213740.1	1446	49aa	Nonsense mediated decay	-	A0A1L1SQ62	-	TSL:1
Vps11-202	ENSMUST00000213249.1	640	120aa	Nonsense mediated decay	-	A0A1L1STI8	-	CDS 5' incomplete TSL:2
Vps11-206	ENSMUST00000216089.1	2977	No protein	Retained intron	-	-	-	TSL:1

The strategy is based on the design of *Vps11*-206 transcript,The transcription is shown below

< Vps11-201
protein coding

Reverse strand ◄——————————————— 13.92 kb ———————————————
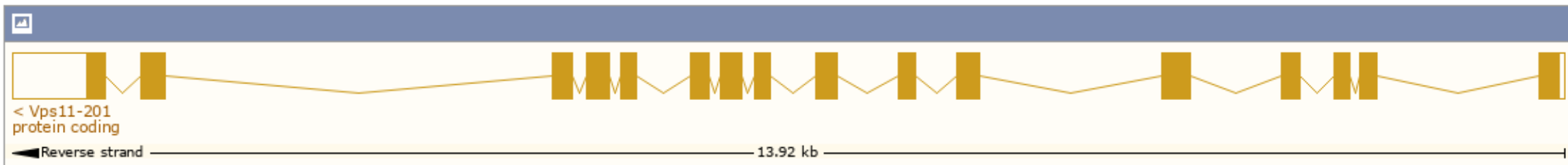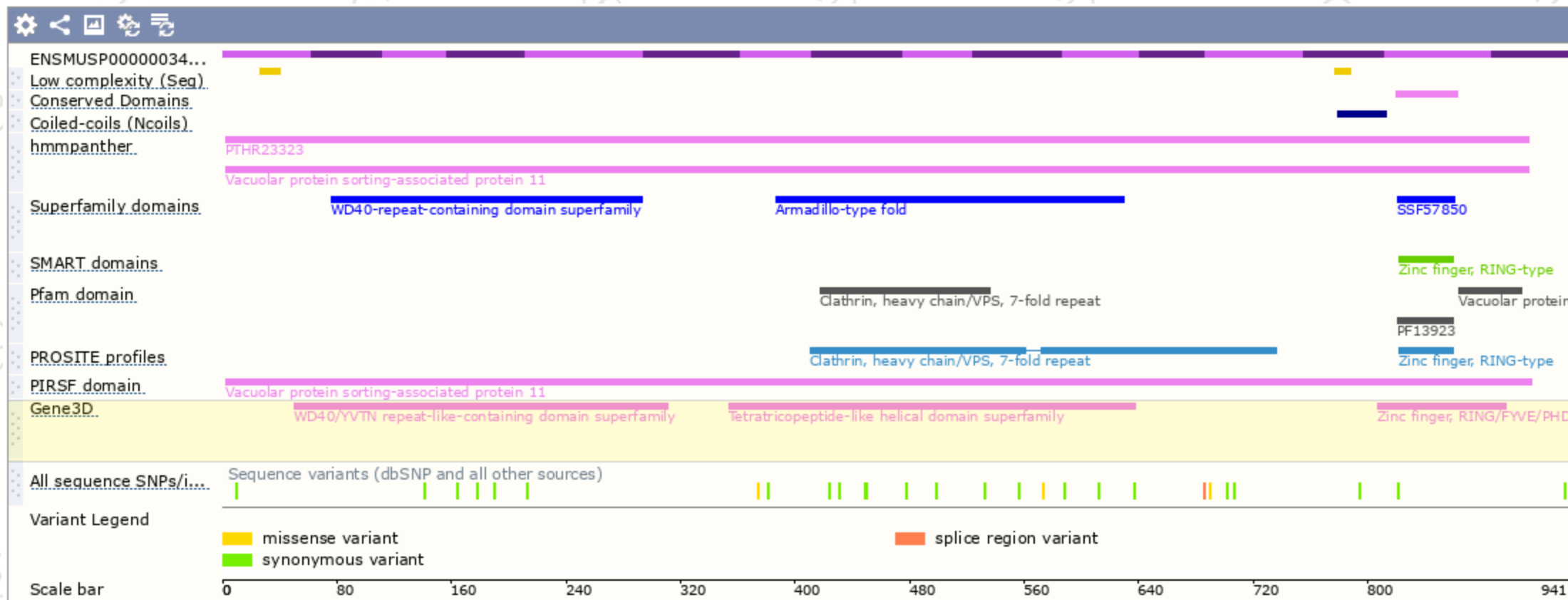
Genomic location distribution
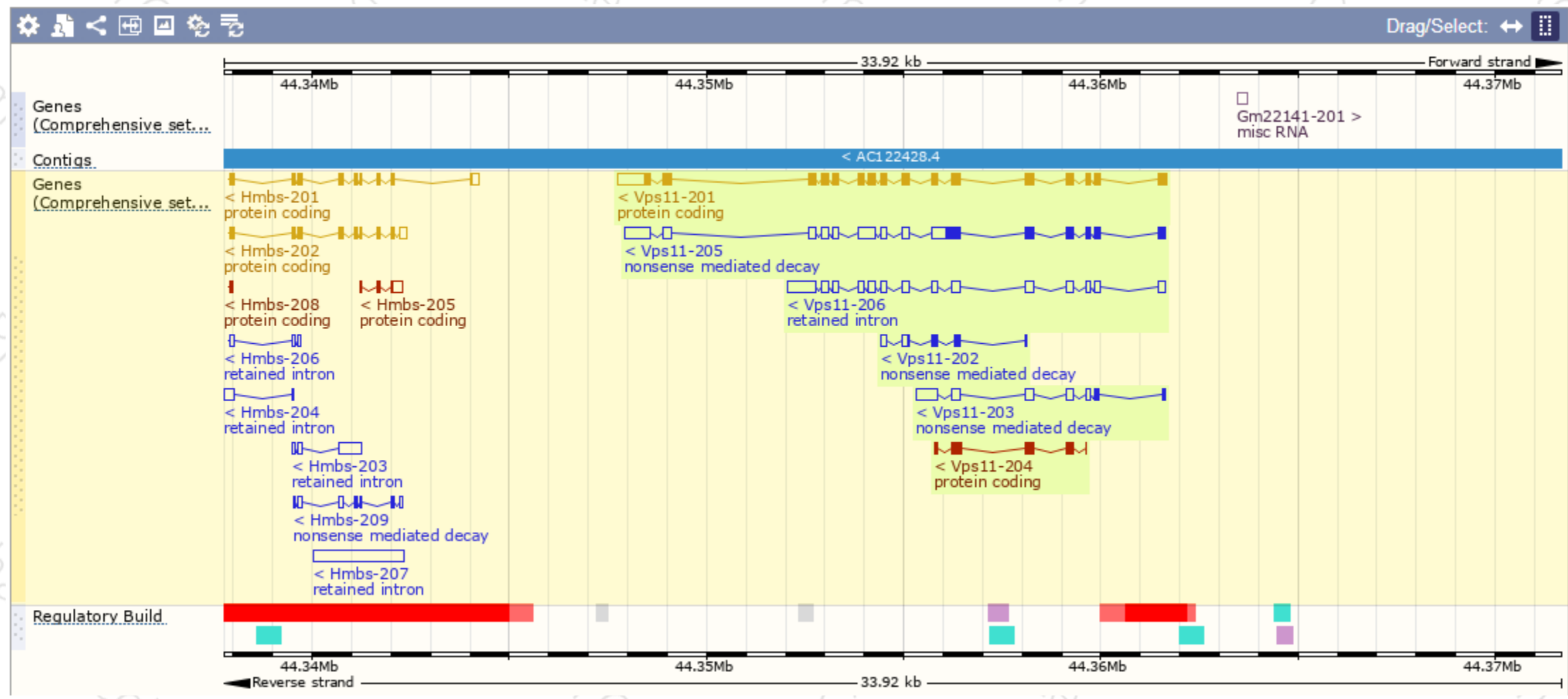
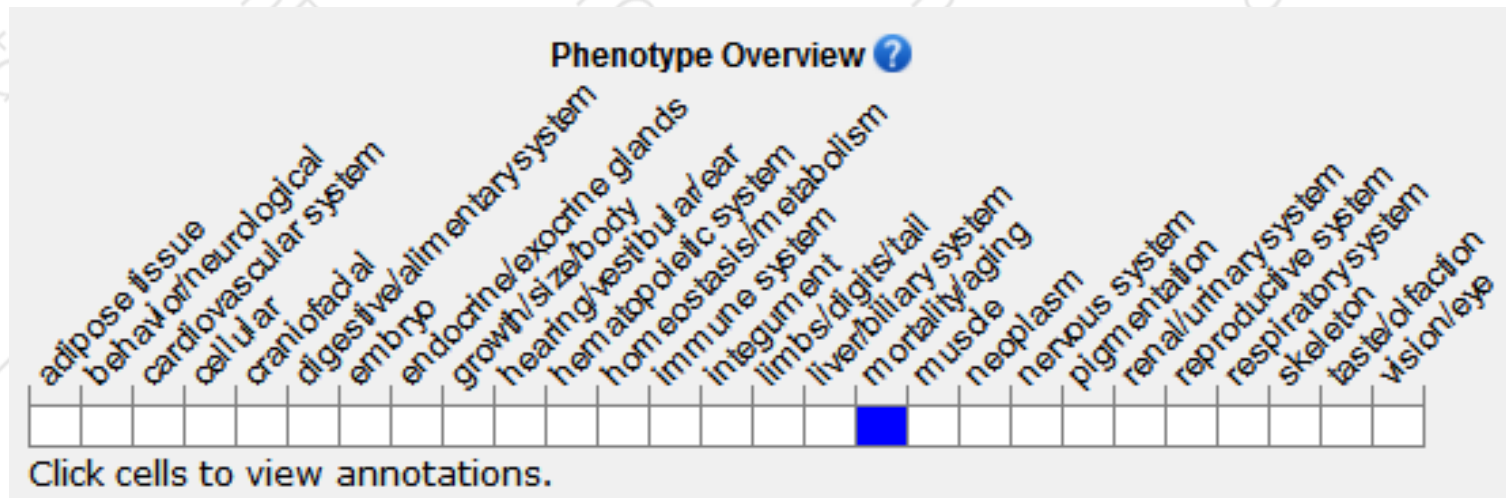# Protein domain

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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