

Pde4c Cas9-CKO Strategy

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Project Overview

Project Name

Pde4c

Project type

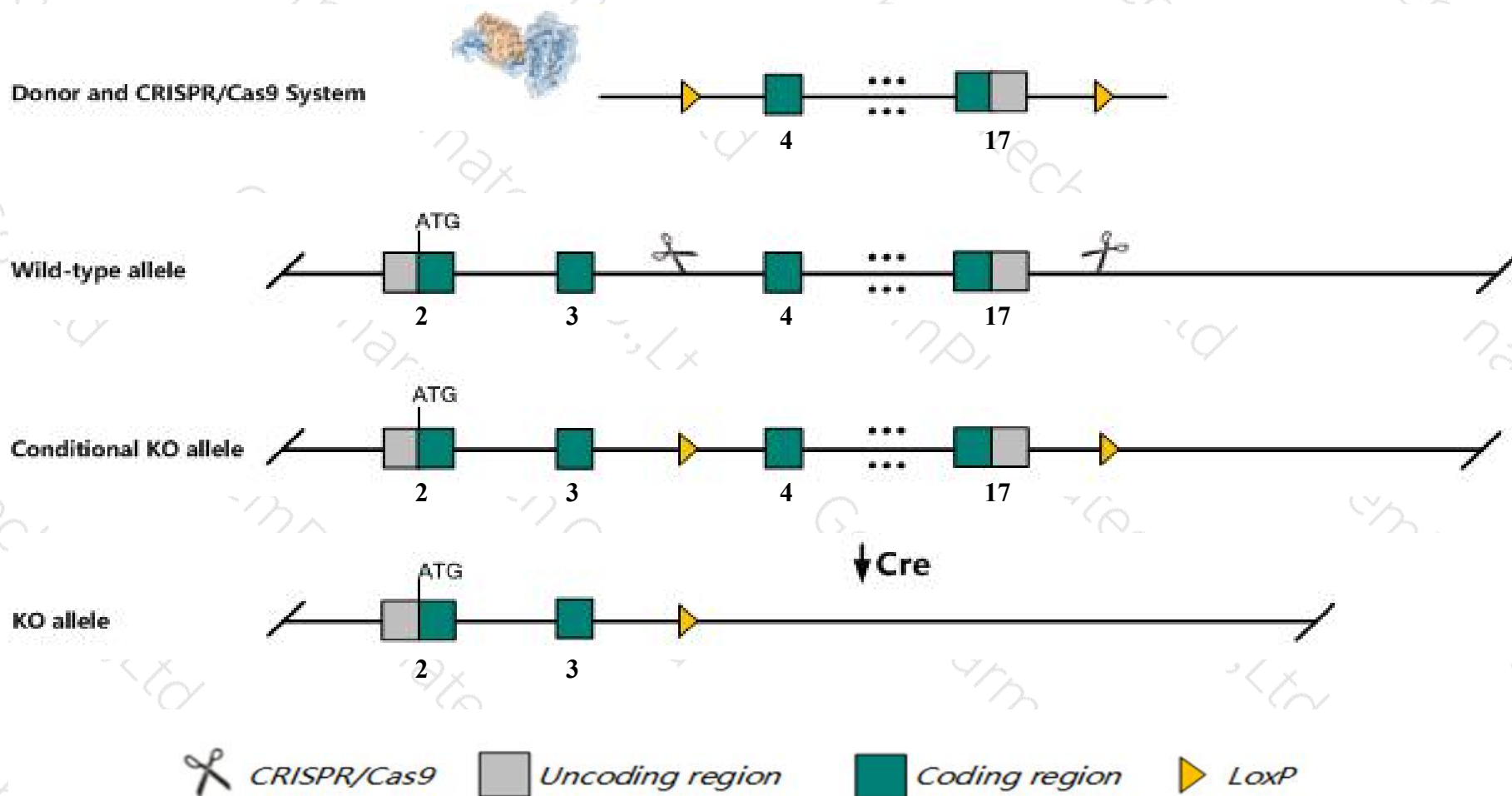
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Pde4c* gene. The schematic diagram is as follows:



- The *Pde4c* gene has 7 transcripts. According to the structure of *Pde4c* gene, exon4-exon17 of *Pde4c*-202 (ENSMUST00000110095.2) transcript is recommended as the knockout region. The region contains 1813bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Pde4c* 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.

Notice

- The *Pde4c* gene is located on the Chr8. 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)

Pde4c phosphodiesterase 4C, cAMP specific [Mus musculus (house mouse)]

Gene ID: 110385, updated on 31-Jan-2019

Summary



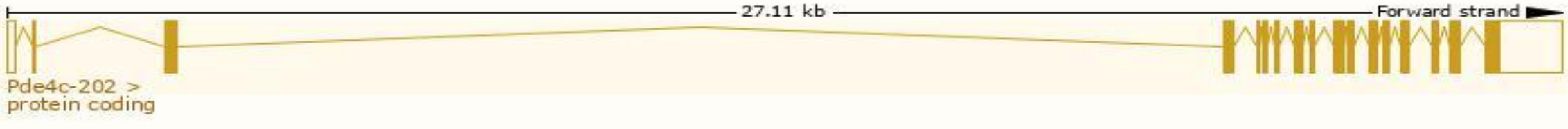
Official Symbol	Pde4c provided by MGI
Official Full Name	phosphodiesterase 4C, cAMP specific provided by MGI
Primary source	MGI:MGI:99556
See related	Ensembl:ENSMUSG00000031842
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	Dpde1, E130301F19Rik, dunce
Expression	Biased expression in kidney adult (RPKM 28.4), liver adult (RPKM 8.2) and 12 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

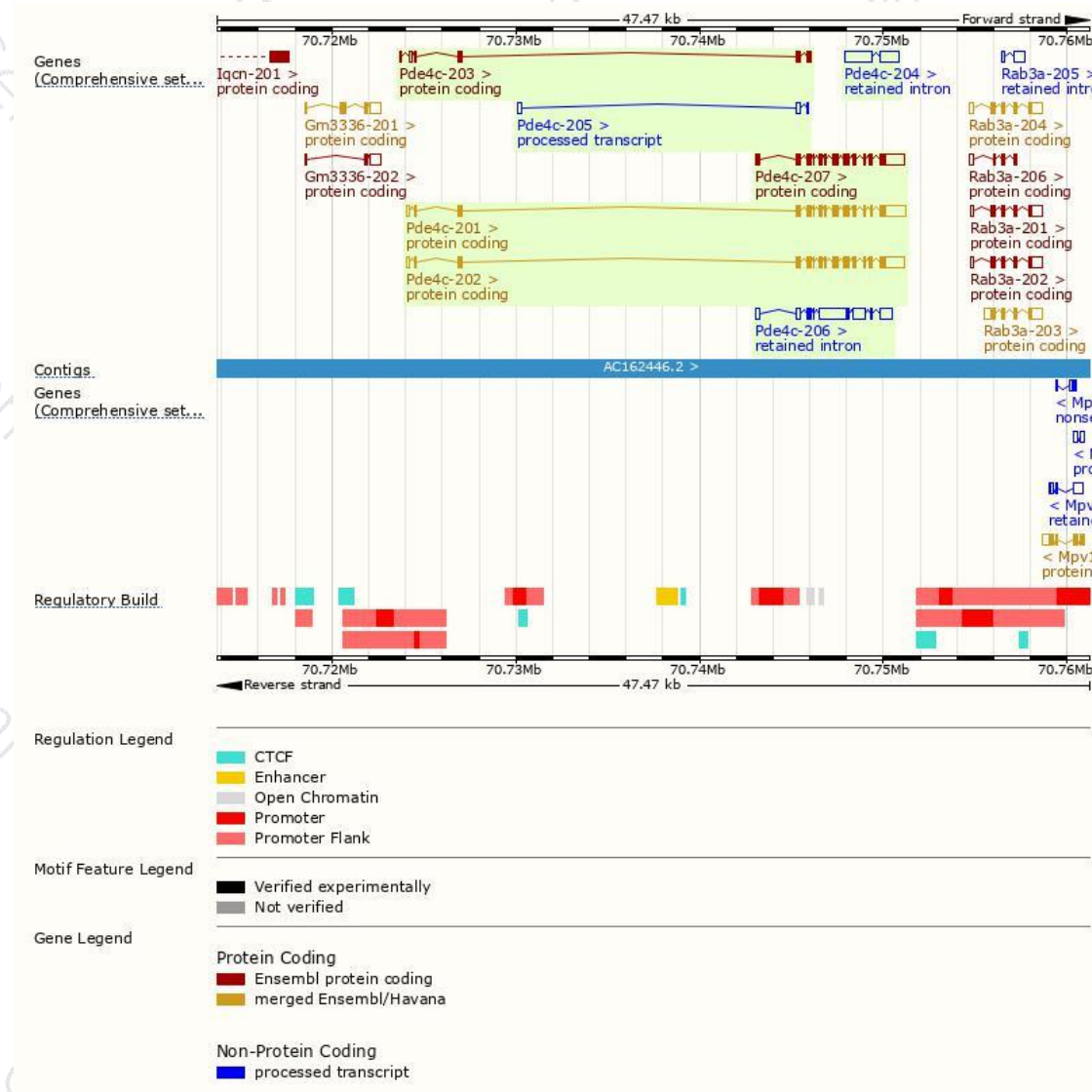
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Pde4c-202	ENSMUST00000110095.2	3290	686aa	Protein coding	CCDS80891	Q3UEI1	TSL:1 GENCODE basic APPRIS P2
Pde4c-201	ENSMUST00000034307.13	3203	652aa	Protein coding	CCDS22378	Q3UEI1	TSL:1 GENCODE basic
Pde4c-207	ENSMUST00000224874.1	3099	646aa	Protein coding	-	A0A286YD02	GENCODE basic APPRIS ALT2
Pde4c-203	ENSMUST00000123739.7	774	178aa	Protein coding	-	D3Z2G1	CDS 3' incomplete TSL:5
Pde4c-205	ENSMUST00000134693.7	392	No protein	Processed transcript	-	-	TSL:5
Pde4c-206	ENSMUST00000149272.1	3452	No protein	Retained intron	-	-	TSL:1
Pde4c-204	ENSMUST00000128685.1	2489	No protein	Retained intron	-	-	TSL:3

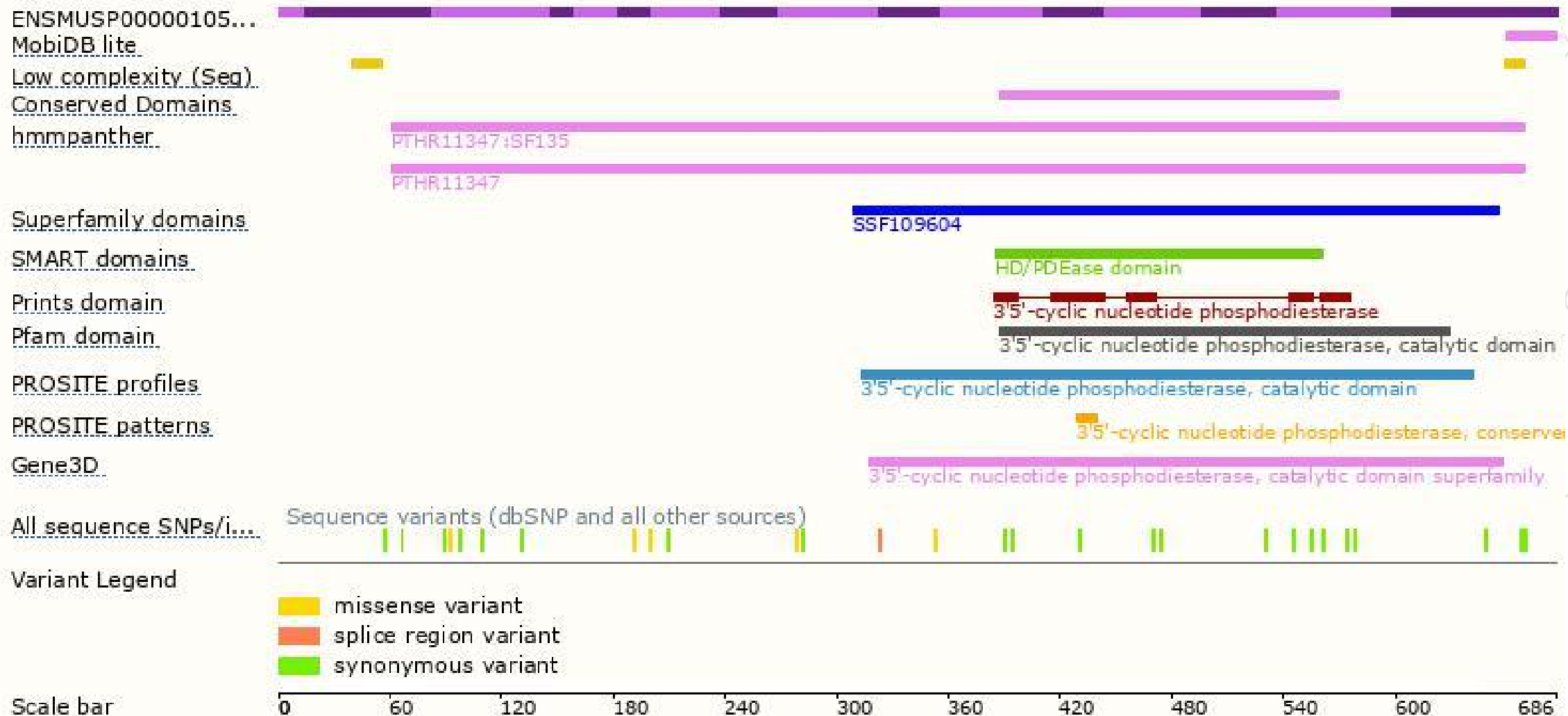
The strategy is based on the design of *Pde4c-202* transcript,The transcription is shown below



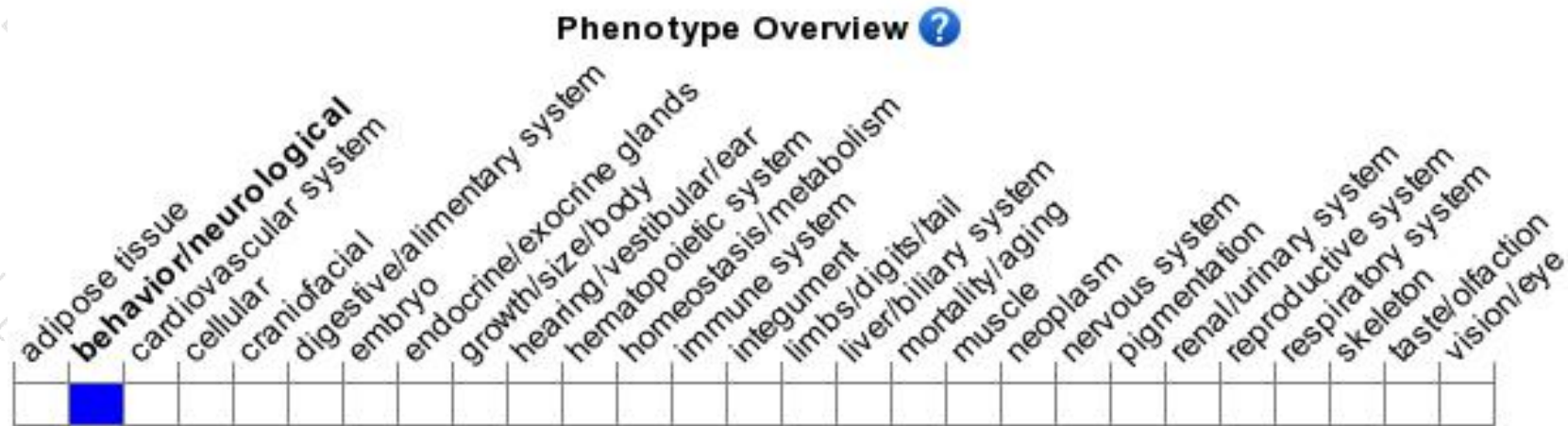
Genomic location distribution



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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