

Spink6 Cas9-CKO Strategy

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Project Overview

Project Name

Spink6

Project type

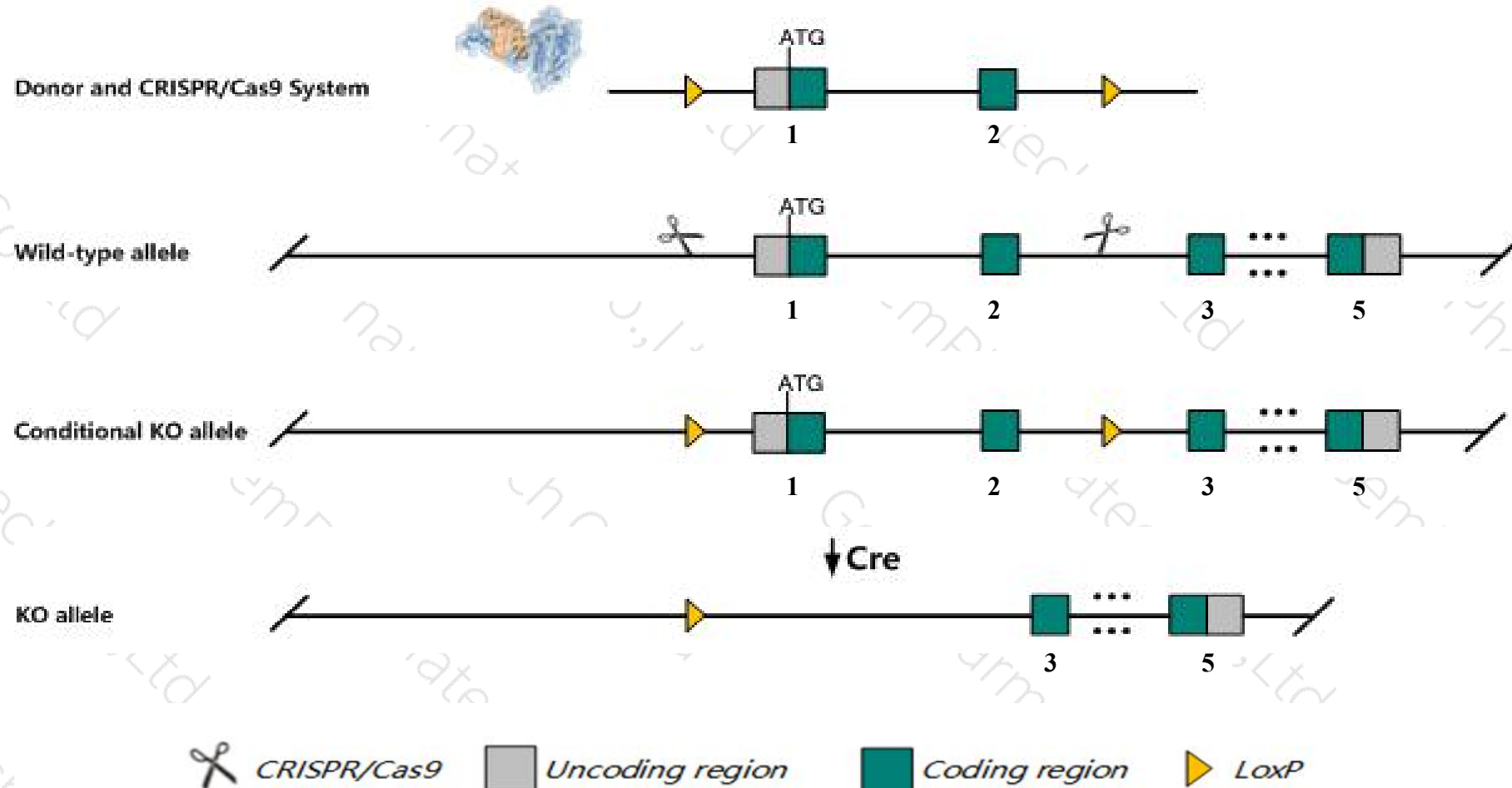
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Spink6* gene. The schematic diagram is as follows:



- The *Spink6* gene has 4 transcripts. According to the structure of *Spink6* gene, exon1-exon2 of *Spink6*-201(ENSMUST00000068473.3) transcript is recommended as the knockout region. The region contains start codon ATG. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Spink6* 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 *Spink6* gene is located on the Chr18. 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)

Spink6 serine peptidase inhibitor, Kazal type 6 [Mus musculus (house mouse)]

Gene ID: 433180, updated on 13-Mar-2020

Summary



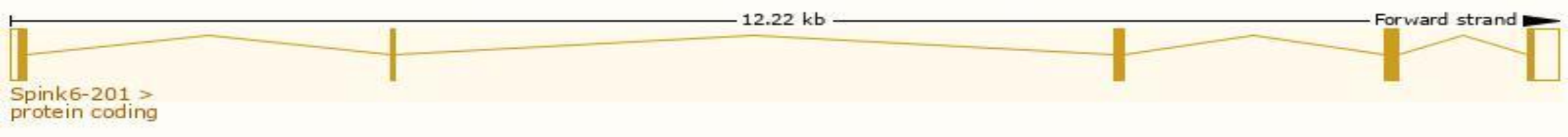
Official Symbol	Spink6 provided by MGI
Official Full Name	serine peptidase inhibitor, Kazal type 6 provided by MGI
Primary source	MGI:MGI:3648654
See related	Ensembl:ENSMUSG00000055095
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	EG433180
Orthologs	human all

Transcript information (Ensembl)

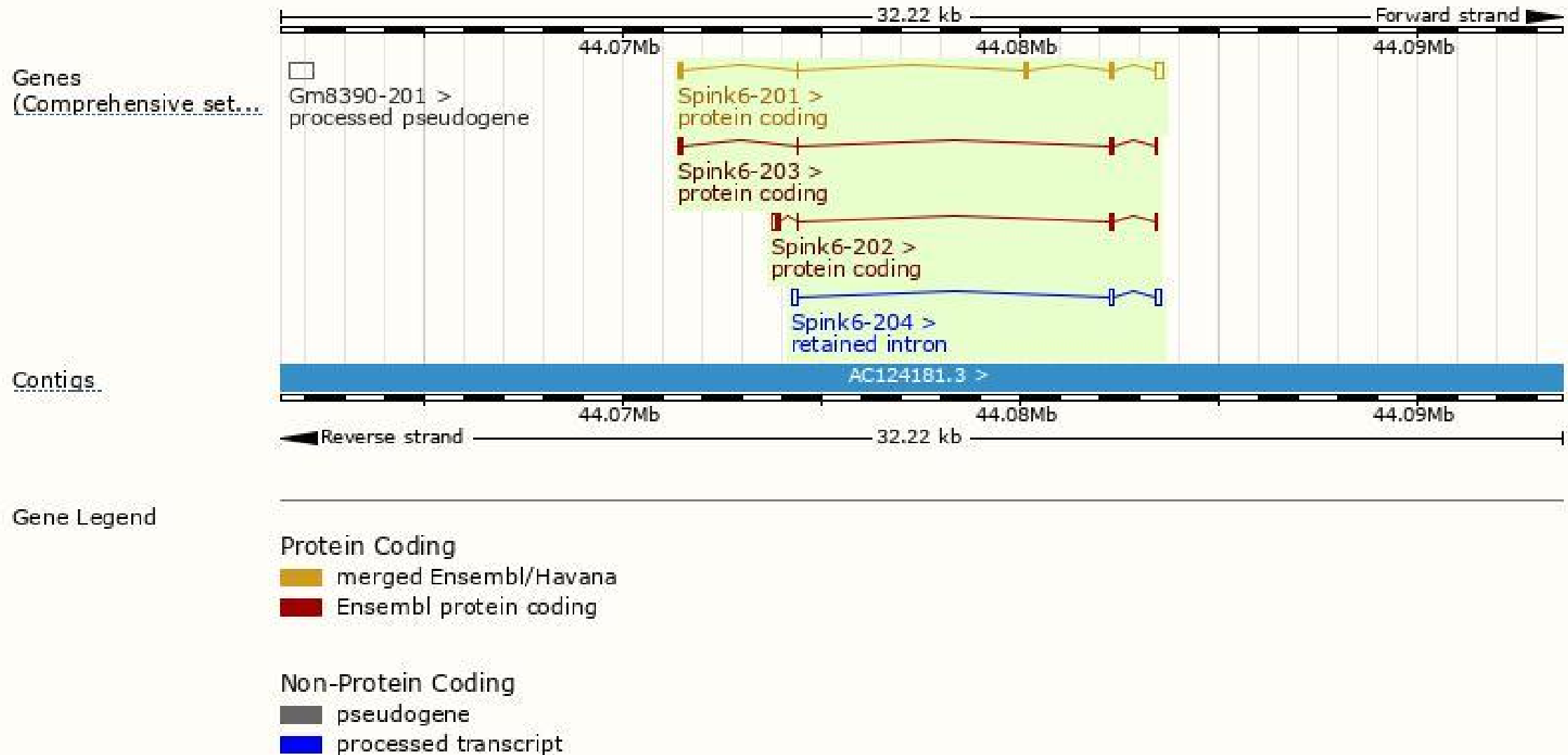
The gene has 4 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Spink6-201	ENSMUST00000068473.3	588	105aa	Protein coding	CCDS29224	Q8BT20	TSL:1 GENCODE basic
Spink6-202	ENSMUST00000235436.1	383	94aa	Protein coding	-	A0A494BB62	GENCODE basic
Spink6-203	ENSMUST00000236634.1	318	80aa	Protein coding	-	B9EJQ7	GENCODE basic APPRIS P1
Spink6-204	ENSMUST00000237636.1	432	No protein	Retained intron	-	-	

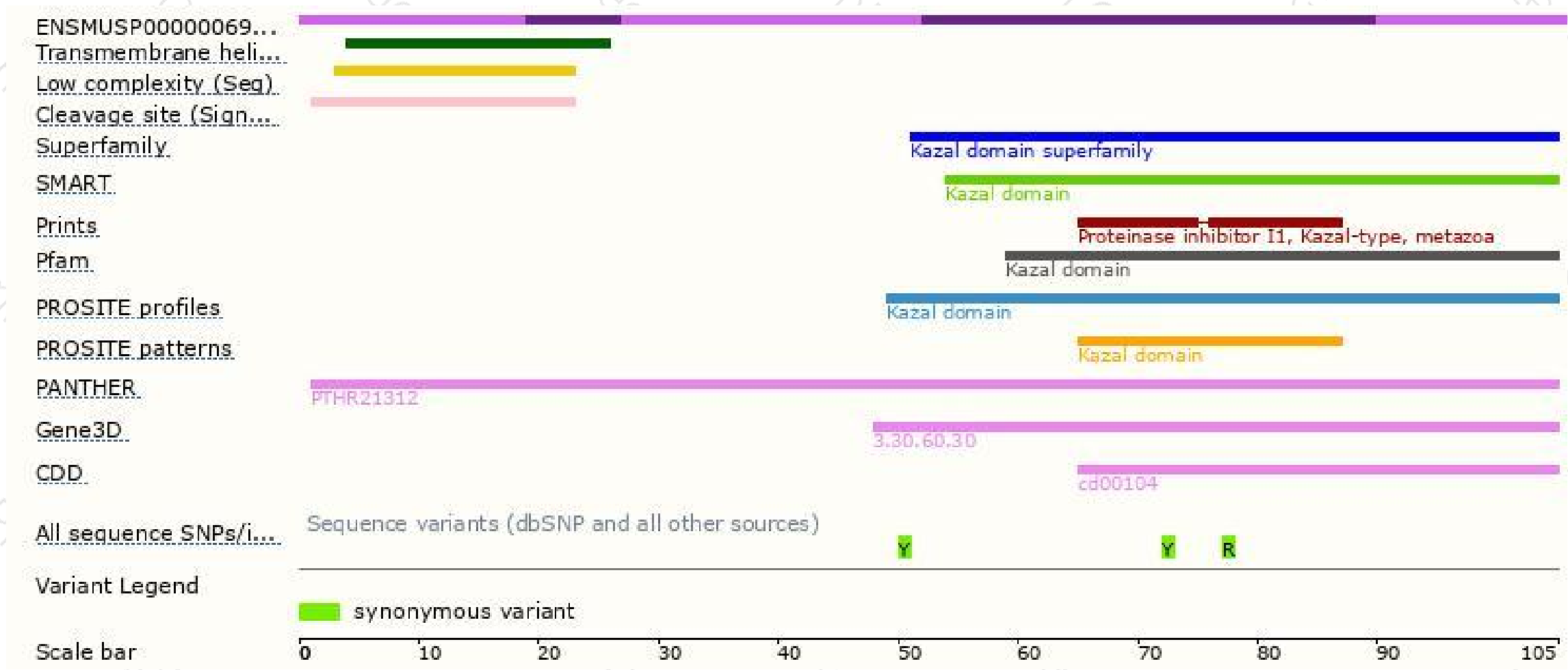
The strategy is based on the design of *Spink6-201* transcript,the transcription is shown below:



Genomic location distribution



Protein domain



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

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