

***Trim39* Cas9-CKO Strategy**

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Reviewer:

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Project Overview

Project Name

Trim39

Project type

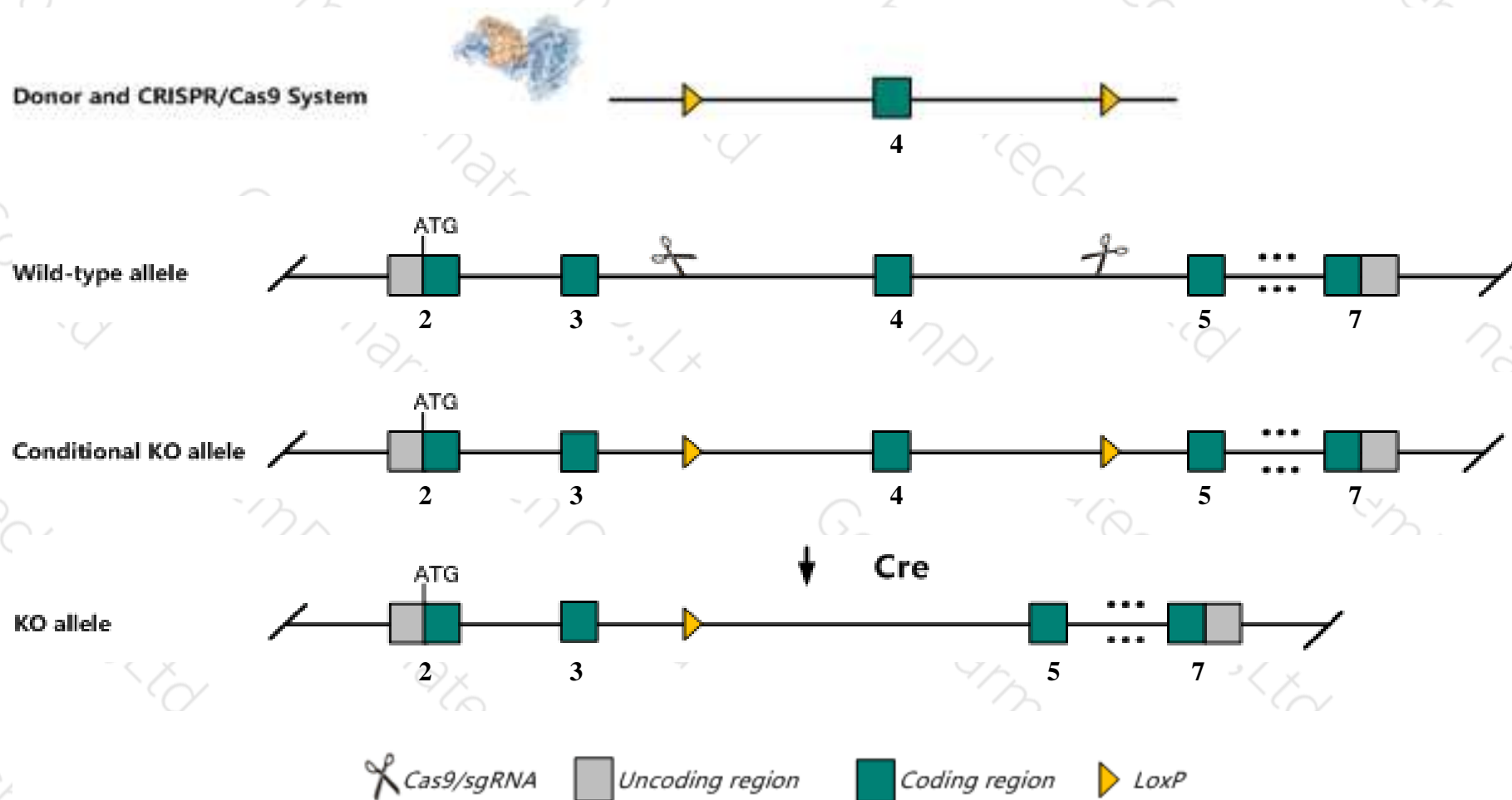
Cas9-CKO

Strain background

C57BL/6JGpt

Conditional Knockout strategy

This model will use CRISPR/Cas9 technology to edit the *Trim39* gene. The schematic diagram is as follows:



Technical routes

- The *Trim39* gene has 7 transcripts. According to the structure of *Trim39* gene, exon4 of *Trim39-203* (ENSMUST00000113706.9) transcript is recommended as the knockout region. The region contains 231bp coding sequence. Knock out the region will result in disruption of protein function.
- In this project we use CRISPR/Cas9 technology to modify *Trim39* gene. The brief process is as follows: sgRNA was transcribed in vitro, donor vector was constructed. Cas9, sgRNA 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 was 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 KO region is close to 5'UTR region of the *Rpp21* gene. Knockout the region may affect the expression of *Rpp21* gene.
- The *Trim39* gene is located on the Chr17. 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)

Trim39 tripartite motif-containing 39 [*Mus musculus* (house mouse)]

Gene ID: 79263, updated on 14-Aug-2019

Summary



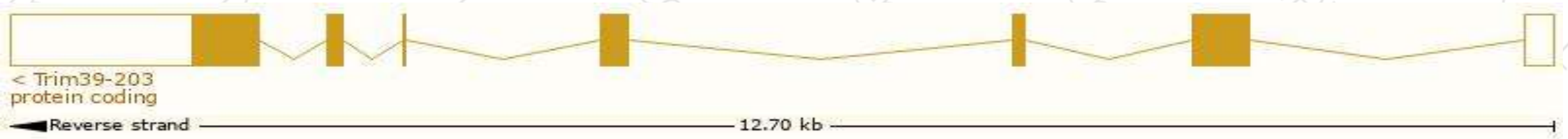
Official Symbol	Trim39 provided by MGI
Official Full Name	tripartite motif-containing 39 provided by MGI
Primary source	MGI:MGI:1890659
See related	Ensembl:ENSMUSG00000045409
Gene type	protein coding
RefSeq status	VALIDATED
Organism	Mus musculus
Lineage	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus
Also known as	tfp; Rnf23; mKIAA4179; RBCC-B30.2; 1100001D15Rik; E130103K13Rik
Expression	Ubiquitous expression in testis adult (RPKM 12.6), CNS E14 (RPKM 11.4) and 28 other tissues See more
Orthologs	human all

Transcript information (Ensembl)

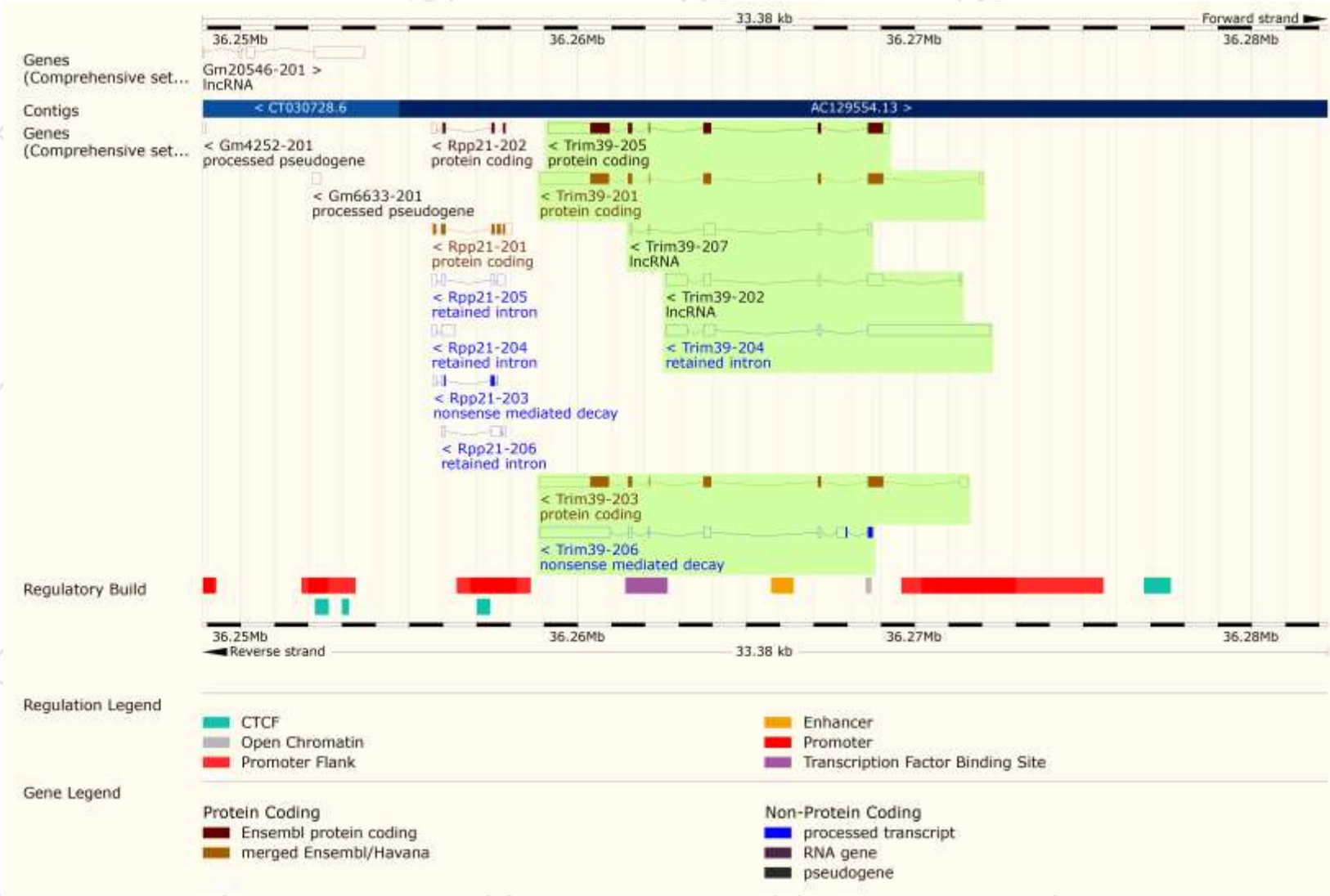
The gene has 7 transcripts,all transcripts are shown below:

Name	Transcript ID	bp	Protein	Biotype	CCDS	UniProt	Flags
Trim39-203	ENSMUST00000113706.9	3204	488aa	Protein coding	CCDS37611	E9QLN4	TSL:1 GENCODE basic APPRIS P1
Trim39-201	ENSMUST00000042717.12	3085	488aa	Protein coding	CCDS37611	E9QLN4	TSL:1 GENCODE basic APPRIS P1
Trim39-205	ENSMUST00000173369.1	2914	496aa	Protein coding	-	G3UWIO	TSL:1 GENCODE basic
Trim39-206	ENSMUST00000173665.7	2974	60aa	Nonsense mediated decay	-	G3UX29	CDS 5' incomplete TSL:1
Trim39-202	ENSMUST00000113704.9	1465	No protein	Processed transcript	-	-	TSL:1
Trim39-207	ENSMUST00000174197.7	633	No protein	Processed transcript	-	-	TSL:3
Trim39-204	ENSMUST00000172832.1	4718	No protein	Retained intron	-	-	TSL:2

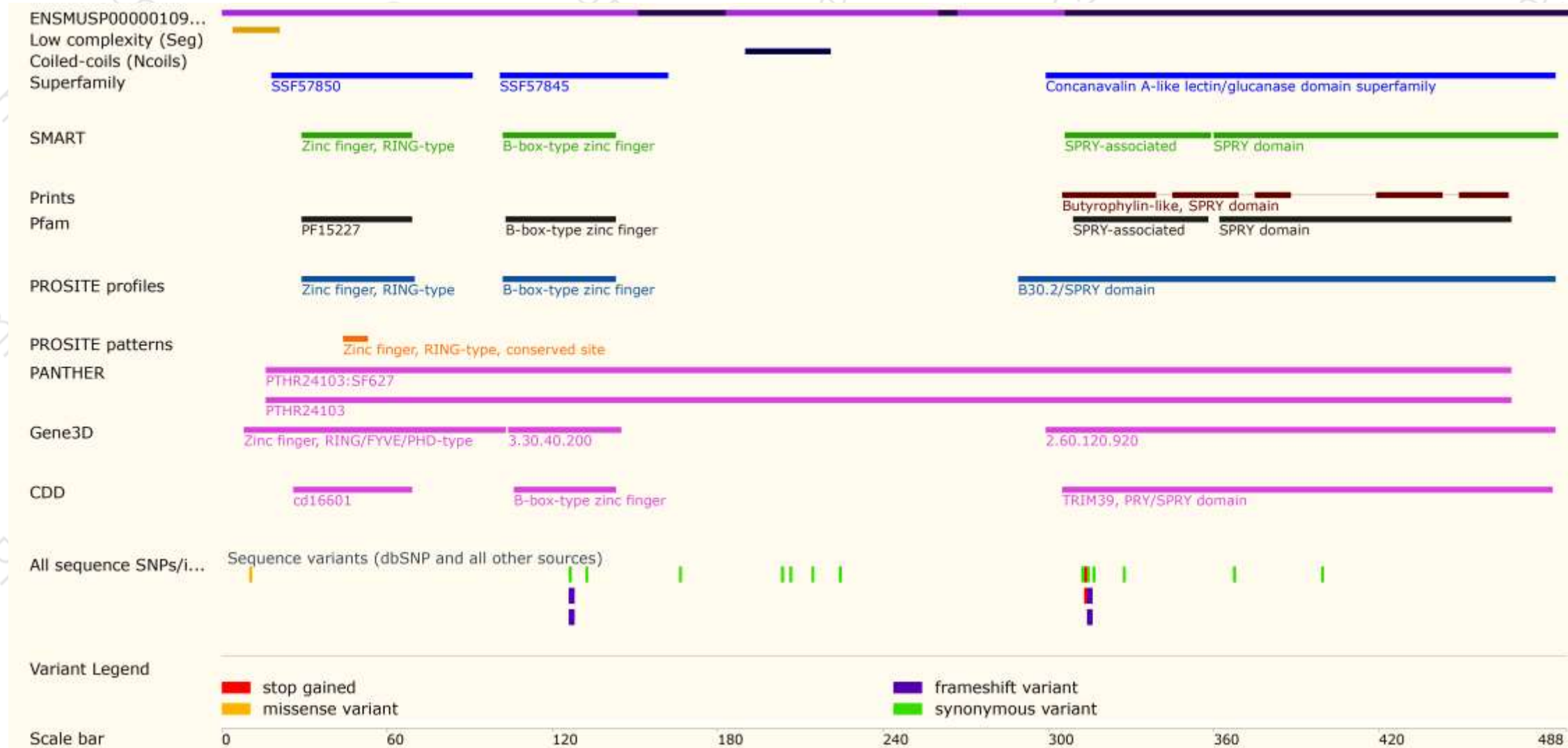
The strategy is based on the design of *Trim39-203* transcript,The transcription is shown below



Genomic location distribution



Protein domain



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

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