

Gephebase Gene		GepheID
TRIM5alpha-CypA chimeric gene (https://www.gephebase.org/search-criteria?/and+Gene+Gephebase+^TRIM5alpha-CypA+chimeric+gene+^#gephebase-summary-title)	GP00001137	Main curator
Entry Status	Courtier	
Published		

Trait Category	Trait	Trait State in Taxon A	Trait State in Taxon B	Ancestral State	Taxonomic Status
Physiology (https://www.gephebase.org/search-criteria?/and+TraitCategory=~Physiology~#gephebase-summary-title)					
Pathogen resistance (retroviruses) (https://www.gephebase.org/search-criteria?/and+Trait=~Pathogen resistance (retroviruses)~#gephebase-summary-title)					
Other Old World Monkeys (no HIV-1 restriction activity)					
Macaca spp. (HIV-1 restriction activity)					
Data not curated					
Intergeneric or Higher (https://www.gephebase.org/search-criteria?/and+TaxonomicStatus=~Intergeneric or Higher~#gephebase-summary-title)					

Taxon A		Taxon B	
	Latin Name		Latin Name
Cercopithecidae		Macaca	
(#Cercopithecidae #gephebase-summary-title)		(#Macaca #gephebase-summary-title)	
	Common Name		Common Name
Old World monkeys		macaques	
	Synonyms		Synonyms
Old World monkeys; monkey; monkeys		macaques; macaque	
	Rank		Rank
family		genus	
	Lineage		Lineage
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia;		cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia;	
Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii;		Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii;	
Dipnotetrapodomorpha; Tetrapoda; Amniota; Mammalia; Theria; Eutheria; Boreoeutheria;		Dipnotetrapodomorpha; Tetrapoda; Amniota; Mammalia; Theria; Eutheria; Boreoeutheria;	
Euarchontoglires; Primates; Haplorrhini; Simiiformes; Catarrhini; Cercopithecoidea		Euarchontoglires; Primates; Haplorrhini; Simiiformes; Catarrhini; Cercopithecoidea;	
	Parent	Cercopithecidae; Cercopithecinae	
Cercopithecoidea () - (Rank: superfamily)		Cercopithecinae () - (Rank: subfamily)	
(https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=314294)		(https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9528)	
	NCBI Taxonomy ID		NCBI Taxonomy ID
9527		9539	
(https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9527)		(https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9539)	
	is Taxon A an Intraspecies?		is Taxon B an Intraspecies?
No		No	

TRIM5	Generic Gene Name	Q9C035 (http://www.uniprot.org/uniprot/Q9C035)	UniProtKB Homo sapiens
RNF88; TRIM5alpha	Synonyms	AAB33697 (https://www.ncbi.nlm.nih.gov/nuccore/AAB33697)	GenebankID or UniProtKB
9606.ENSPO0000369373 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=9606.ENSPO0000369373)	String		
	Sequence Similarities		
Belongs to the TRIM/RBCC family.			
	GO - Molecular Function		
GO:0042802 : identical protein binding (https://www.ebi.ac.uk/QuickGO/term/GO:0042802)			
GO:0042803 : protein homodimerization activity (https://www.ebi.ac.uk/QuickGO/term/GO:0042803)			
GO:0008270 : zinc ion binding (https://www.ebi.ac.uk/QuickGO/term/GO:0008270)			
GO:0019901 : protein kinase binding (https://www.ebi.ac.uk/QuickGO/term/GO:0019901)			

GO:0030674 : protein binding, bridging
(<https://www.ebi.ac.uk/QuickGO/term/GO:0030674>)
GO:0008329 : signaling pattern recognition receptor activity
(<https://www.ebi.ac.uk/QuickGO/term/GO:0008329>)
GO:0004842 : ubiquitin-protein transferase activity
(<https://www.ebi.ac.uk/QuickGO/term/GO:0004842>)

GO - Biological Process

GO:0045087 : innate immune response
(<https://www.ebi.ac.uk/QuickGO/term/GO:0045087>)
GO:0043410 : positive regulation of MAPK cascade
(<https://www.ebi.ac.uk/QuickGO/term/GO:0043410>)
GO:0051092 : positive regulation of NF-kappaB transcription factor activity
(<https://www.ebi.ac.uk/QuickGO/term/GO:0051092>)
GO:0051607 : defense response to virus
(<https://www.ebi.ac.uk/QuickGO/term/GO:0051607>)
GO:0043123 : positive regulation of I-kappaB kinase/NF-kappaB signaling
(<https://www.ebi.ac.uk/QuickGO/term/GO:0043123>)
GO:0032880 : regulation of protein localization
(<https://www.ebi.ac.uk/QuickGO/term/GO:0032880>)
GO:0060333 : interferon-gamma-mediated signaling pathway
(<https://www.ebi.ac.uk/QuickGO/term/GO:0060333>)
GO:0016032 : viral process (<https://www.ebi.ac.uk/QuickGO/term/GO:0016032>)
GO:0051091 : positive regulation of DNA-binding transcription factor activity
(<https://www.ebi.ac.uk/QuickGO/term/GO:0051091>)
GO:0002218 : activation of innate immune response
(<https://www.ebi.ac.uk/QuickGO/term/GO:0002218>)
GO:0006914 : autophagy (<https://www.ebi.ac.uk/QuickGO/term/GO:0006914>)
GO:0046597 : negative regulation of viral entry into host cell
(<https://www.ebi.ac.uk/QuickGO/term/GO:0046597>)
GO:1902187 : negative regulation of viral release from host cell
(<https://www.ebi.ac.uk/QuickGO/term/GO:1902187>)
GO:0070534 : protein K63-linked ubiquitination
(<https://www.ebi.ac.uk/QuickGO/term/GO:0070534>)
GO:0070206 : protein trimerization (<https://www.ebi.ac.uk/QuickGO/term/GO:0070206>)
GO:0031664 : regulation of lipopolysaccharide-mediated signaling pathway
(<https://www.ebi.ac.uk/QuickGO/term/GO:0031664>)

GO - Cellular Component

GO:0005737 : cytoplasm (<https://www.ebi.ac.uk/QuickGO/term/GO:0005737>)
GO:0005829 : cytosol (<https://www.ebi.ac.uk/QuickGO/term/GO:0005829>)
GO:0005634 : nucleus (<https://www.ebi.ac.uk/QuickGO/term/GO:0005634>)
GO:0000932 : P-body (<https://www.ebi.ac.uk/QuickGO/term/GO:0000932>)

	Presumptive Null
No (https://www.gephebase.org/search-criteria?/and+Presumptive Null=~No~#gephebase-summary-title)	
	Molecular Type
Other (https://www.gephebase.org/search-criteria?/and+Molecular Type=~Other~#gephebase-summary-title)	
	Aberration Type
Insertion (https://www.gephebase.org/search-criteria?/and+Aberration Type=~Insertion~#gephebase-summary-title)	
	Insertion Size
1-10 kb	
	Molecular Details of the Mutation
LINE-mediated retrotransposition of the CyclophilinA gene into 3'UTR (exon 8) of TRIM5alpha	
	Experimental Evidence
Candidate Gene (https://www.gephebase.org/search-criteria?/and+Experimental Evidence=~Candidate Gene~#gephebase-summary-title)	
	Main Reference
Chance favors a prepared genome. (2008) (https://pubmed.ncbi.nlm.nih.gov/18299570)	
	Authors
Stoye JP; Yap MW	
	Abstract
-	
	Additional References

RELATED GEPHE

	Related Genes
2 (Mitochondrial antiviral signaling (MAVS), TRIM5alpha) (https://www.gephebase.org/search-criteria?/or+Taxon ID=~9527~/and+Trait=Pathogen resistance/or+Taxon ID=~9539~/and+Trait=Pathogen resistance/and+groupHaplotypes=true#gephebase-summary-title)	
	Related Haplotypes
No matches found.	

EXTERNAL LINKS

COMMENTS

@ChimericGene @TE; Trim5CypA2 clearly has restriction activity because it can block infection by HIV-2 simian immunodeficiency virus (SIV)AGMtan and feline immunodeficiency virus (FIV). This difference in restriction properties results from a point mutation leading to an H69R change in the CypA domain