

GEPHE SUMMARY

EGFR (https://www.gephebase.org/search-criteria?/and+Gene Gephebase="EGFR"#gephebase-summary-title)	Gephebase Gene	GP00001537	GepheID
Published	Entry Status	Prigent	Main curator

PHENOTYPIC CHANGE

Morphology (https://www.gephebase.org/search-criteria?/and+Trait Category="Morphology"#gephebase-summary-title)	Trait Category		
Coloration (skin) (https://www.gephebase.org/search-criteria?/and+Trait ="Coloration (skin)#gephebase-summary-title)	Trait		
Human Europeans with lighter skin pigmentation	Trait State in Taxon A		
Human Native Americans with darker skin pigmentation	Trait State in Taxon B		
Taxon A	Ancestral State		
Intraspecific (https://www.gephebase.org/search-criteria?/and+Taxonomic Status="Intraspecific"#gephebase-summary-title)	Taxonomic Status		
	Taxon A	Taxon B	
	Latin Name		Latin Name
Homo sapiens (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms="Homo sapiens"#gephebase-summary-title)		Homo sapiens (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms="Homo sapiens"#gephebase-summary-title)	
	Common Name		Common Name
human		human	
	Synonyms		Synonyms
human; man; Homo sapiens Linnaeus, 1758; Home sapiens; Homo sapiens; Homo sapeins; Homo sapien; Homo sapians; Homo sapien; Homo sapience; Homo sapiense; Homo sapients; Homo sapines; Homo spaiens; Homo spiens; Humo sapiens		human; man; Homo sapiens Linnaeus, 1758; Home sapiens; Homo sapiens; Homo sapeins; Homo sapien; Homo sapians; Homo sapien; Homo sapience; Homo sapiense; Homo sapients; Homo sapines; Homo spaiens; Homo spiens; Humo sapiens	
	Rank		Rank
species		species	
	Lineage		Lineage
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrapodomorpha; Tetrapoda; Amniota; Mammalia; Theria; Eutheria; Boreoeutheria; Euarchontoglires; Primates; Haplorrhini; Simiiformes; Catarrhini; Hominoidea; Hominidae; Homininae; Homo		cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrapodomorpha; Tetrapoda; Amniota; Mammalia; Theria; Eutheria; Boreoeutheria; Euarchontoglires; Primates; Haplorrhini; Simiiformes; Catarrhini; Hominoidea; Hominidae; Homininae; Homo	
	Parent		Parent
Homo () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9605)		Homo () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9605)	
	NCBI Taxonomy ID		NCBI Taxonomy ID
9606 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9606)		9606 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9606)	
	is Taxon A an Intraspecies?		is Taxon B an Intraspecies?
Yes		Yes	
	Taxon A Description		Taxon B Description
Human Europeans with lighter skin pigmentation		Human Native Americans with darker skin pigmentation	

GENOTYPIC CHANGE

EGFR	Generic Gene Name	P00533 (http://www.uniprot.org/uniprot/P00533)	UniProtKB Homo sapiens
ERBB; HER1; mENA; ERBB1; PIG61; NISBD2	Synonyms	()	GenebankID or UniProtKB
9606.ENSPO0000275493 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=9606.ENSPO0000275493)	String		
	Sequence Similarities		
Belongs to the protein kinase superfamily. Tyr protein kinase family. EGF receptor subfamily.			
	GO - Molecular Function		
GO:0004888 : transmembrane signaling receptor activity (https://www.ebi.ac.uk/QuickGO/term/GO:0004888)			

GO:0005524 : ATP binding (<https://www.ebi.ac.uk/QuickGO/term/GO:0005524>)
GO:0042802 : identical protein binding
(<https://www.ebi.ac.uk/QuickGO/term/GO:0042802>)
GO:0046982 : protein heterodimerization activity
(<https://www.ebi.ac.uk/QuickGO/term/GO:0046982>)
GO:0046934 : phosphatidylinositol-4,5-bisphosphate 3-kinase activity
(<https://www.ebi.ac.uk/QuickGO/term/GO:0046934>)
GO:0005088 : Ras guanyl-nucleotide exchange factor activity
(<https://www.ebi.ac.uk/QuickGO/term/GO:0005088>)
GO:0003682 : chromatin binding (<https://www.ebi.ac.uk/QuickGO/term/GO:0003682>)
GO:0019899 : enzyme binding (<https://www.ebi.ac.uk/QuickGO/term/GO:0019899>)
GO:0005516 : calmodulin binding (<https://www.ebi.ac.uk/QuickGO/term/GO:0005516>)
GO:0019901 : protein kinase binding (<https://www.ebi.ac.uk/QuickGO/term/GO:0019901>)
GO:0045296 : cadherin binding (<https://www.ebi.ac.uk/QuickGO/term/GO:0045296>)
GO:0005006 : epidermal growth factor-activated receptor activity
(<https://www.ebi.ac.uk/QuickGO/term/GO:0005006>)
GO:0004714 : transmembrane receptor protein tyrosine kinase activity
(<https://www.ebi.ac.uk/QuickGO/term/GO:0004714>)
GO:0019903 : protein phosphatase binding
(<https://www.ebi.ac.uk/QuickGO/term/GO:0019903>)
GO:0004713 : protein tyrosine kinase activity
(<https://www.ebi.ac.uk/QuickGO/term/GO:0004713>)
GO:0001618 : virus receptor activity (<https://www.ebi.ac.uk/QuickGO/term/GO:0001618>)
GO:0005178 : integrin binding (<https://www.ebi.ac.uk/QuickGO/term/GO:0005178>)
GO:0031625 : ubiquitin protein ligase binding
(<https://www.ebi.ac.uk/QuickGO/term/GO:0031625>)
GO:0051015 : actin filament binding (<https://www.ebi.ac.uk/QuickGO/term/GO:0051015>)
GO:0003690 : double-stranded DNA binding
(<https://www.ebi.ac.uk/QuickGO/term/GO:0003690>)
GO:0048408 : epidermal growth factor binding
(<https://www.ebi.ac.uk/QuickGO/term/GO:0048408>)
GO:0004709 : MAP kinase kinase kinase activity
(<https://www.ebi.ac.uk/QuickGO/term/GO:0004709>)

GO - Biological Process

GO:0007165 : signal transduction (<https://www.ebi.ac.uk/QuickGO/term/GO:0007165>)
GO:0043066 : negative regulation of apoptotic process
(<https://www.ebi.ac.uk/QuickGO/term/GO:0043066>)
GO:0045944 : positive regulation of transcription by RNA polymerase II
(<https://www.ebi.ac.uk/QuickGO/term/GO:0045944>)
GO:0006357 : regulation of transcription by RNA polymerase II
(<https://www.ebi.ac.uk/QuickGO/term/GO:0006357>)
GO:0030154 : cell differentiation (<https://www.ebi.ac.uk/QuickGO/term/GO:0030154>)
GO:0045893 : positive regulation of transcription, DNA-templated
(<https://www.ebi.ac.uk/QuickGO/term/GO:0045893>)
GO:0070374 : positive regulation of ERK1 and ERK2 cascade
(<https://www.ebi.ac.uk/QuickGO/term/GO:0070374>)
GO:0008283 : cell proliferation (<https://www.ebi.ac.uk/QuickGO/term/GO:0008283>)
GO:0000165 : MAPK cascade (<https://www.ebi.ac.uk/QuickGO/term/GO:0000165>)
GO:0008284 : positive regulation of cell proliferation
(<https://www.ebi.ac.uk/QuickGO/term/GO:0008284>)
GO:0043406 : positive regulation of MAP kinase activity
(<https://www.ebi.ac.uk/QuickGO/term/GO:0043406>)
GO:0051897 : positive regulation of protein kinase B signaling
(<https://www.ebi.ac.uk/QuickGO/term/GO:0051897>)
GO:0060571 : morphogenesis of an epithelial fold
(<https://www.ebi.ac.uk/QuickGO/term/GO:0060571>)
GO:0042327 : positive regulation of phosphorylation
(<https://www.ebi.ac.uk/QuickGO/term/GO:0042327>)
GO:0006970 : response to osmotic stress
(<https://www.ebi.ac.uk/QuickGO/term/GO:0006970>)
GO:0033138 : positive regulation of peptidyl-serine phosphorylation
(<https://www.ebi.ac.uk/QuickGO/term/GO:0033138>)
GO:0030307 : positive regulation of cell growth
(<https://www.ebi.ac.uk/QuickGO/term/GO:0030307>)
GO:0045907 : positive regulation of vasoconstriction
(<https://www.ebi.ac.uk/QuickGO/term/GO:0045907>)
GO:0001503 : ossification (<https://www.ebi.ac.uk/QuickGO/term/GO:0001503>)
GO:0071260 : cellular response to mechanical stimulus
(<https://www.ebi.ac.uk/QuickGO/term/GO:0071260>)
GO:0050679 : positive regulation of epithelial cell proliferation
(<https://www.ebi.ac.uk/QuickGO/term/GO:0050679>)
GO:0050729 : positive regulation of inflammatory response
(<https://www.ebi.ac.uk/QuickGO/term/GO:0050729>)
GO:0007623 : circadian rhythm (<https://www.ebi.ac.uk/QuickGO/term/GO:0007623>)
GO:0071276 : cellular response to cadmium ion
(<https://www.ebi.ac.uk/QuickGO/term/GO:0071276>)
GO:0030324 : lung development (<https://www.ebi.ac.uk/QuickGO/term/GO:0030324>)
GO:0001942 : hair follicle development

(<https://www.ebi.ac.uk/QuickGO/term/GO:0001942>)
GO:0090263 : positive regulation of canonical Wnt signaling pathway
(<https://www.ebi.ac.uk/QuickGO/term/GO:0090263>)
GO:1901224 : positive regulation of NIK/NF-kappaB signaling
(<https://www.ebi.ac.uk/QuickGO/term/GO:1901224>)
GO:0007166 : cell surface receptor signaling pathway
(<https://www.ebi.ac.uk/QuickGO/term/GO:0007166>)
GO:0098609 : cell-cell adhesion (<https://www.ebi.ac.uk/QuickGO/term/GO:0098609>)
GO:0048546 : digestive tract morphogenesis
(<https://www.ebi.ac.uk/QuickGO/term/GO:0048546>)
GO:0007173 : epidermal growth factor receptor signaling pathway
(<https://www.ebi.ac.uk/QuickGO/term/GO:0007173>)
GO:0009968 : negative regulation of signal transduction
(<https://www.ebi.ac.uk/QuickGO/term/GO:0009968>)
GO:0046777 : protein autophosphorylation
(<https://www.ebi.ac.uk/QuickGO/term/GO:0046777>)
GO:0001934 : positive regulation of protein phosphorylation
(<https://www.ebi.ac.uk/QuickGO/term/GO:0001934>)
GO:0001892 : embryonic placenta development
(<https://www.ebi.ac.uk/QuickGO/term/GO:0001892>)
GO:0018108 : peptidyl-tyrosine phosphorylation
(<https://www.ebi.ac.uk/QuickGO/term/GO:0018108>)
GO:0048661 : positive regulation of smooth muscle cell proliferation
(<https://www.ebi.ac.uk/QuickGO/term/GO:0048661>)
GO:0070372 : regulation of ERK1 and ERK2 cascade
(<https://www.ebi.ac.uk/QuickGO/term/GO:0070372>)
GO:0042060 : wound healing (<https://www.ebi.ac.uk/QuickGO/term/GO:0042060>)
GO:0007611 : learning or memory (<https://www.ebi.ac.uk/QuickGO/term/GO:0007611>)
GO:0061024 : membrane organization
(<https://www.ebi.ac.uk/QuickGO/term/GO:0061024>)
GO:0007435 : salivary gland morphogenesis
(<https://www.ebi.ac.uk/QuickGO/term/GO:0007435>)
GO:0030335 : positive regulation of cell migration
(<https://www.ebi.ac.uk/QuickGO/term/GO:0030335>)
GO:0048146 : positive regulation of fibroblast proliferation
(<https://www.ebi.ac.uk/QuickGO/term/GO:0048146>)
GO:0038083 : peptidyl-tyrosine autophosphorylation
(<https://www.ebi.ac.uk/QuickGO/term/GO:0038083>)
GO:0046328 : regulation of JNK cascade
(<https://www.ebi.ac.uk/QuickGO/term/GO:0046328>)
GO:0043586 : tongue development (<https://www.ebi.ac.uk/QuickGO/term/GO:0043586>)
GO:2000145 : regulation of cell motility
(<https://www.ebi.ac.uk/QuickGO/term/GO:2000145>)
GO:0071549 : cellular response to dexamethasone stimulus
(<https://www.ebi.ac.uk/QuickGO/term/GO:0071549>)
GO:0097755 : positive regulation of blood vessel diameter
(<https://www.ebi.ac.uk/QuickGO/term/GO:0097755>)
GO:0042698 : ovulation cycle (<https://www.ebi.ac.uk/QuickGO/term/GO:0042698>)
GO:0048812 : neuron projection morphogenesis
(<https://www.ebi.ac.uk/QuickGO/term/GO:0048812>)
GO:0051968 : positive regulation of synaptic transmission, glutamatergic
(<https://www.ebi.ac.uk/QuickGO/term/GO:0051968>)
GO:0007494 : midgut development (<https://www.ebi.ac.uk/QuickGO/term/GO:0007494>)
GO:0034614 : cellular response to reactive oxygen species
(<https://www.ebi.ac.uk/QuickGO/term/GO:0034614>)
GO:0032930 : positive regulation of superoxide anion generation
(<https://www.ebi.ac.uk/QuickGO/term/GO:0032930>)
GO:0097421 : liver regeneration (<https://www.ebi.ac.uk/QuickGO/term/GO:0097421>)
GO:0045740 : positive regulation of DNA replication
(<https://www.ebi.ac.uk/QuickGO/term/GO:0045740>)
GO:0006412 : translation (<https://www.ebi.ac.uk/QuickGO/term/GO:0006412>)
GO:0043006 : activation of phospholipase A2 activity by calcium-mediated signaling
(<https://www.ebi.ac.uk/QuickGO/term/GO:0043006>)
GO:0007202 : activation of phospholipase C activity
(<https://www.ebi.ac.uk/QuickGO/term/GO:0007202>)
GO:0048143 : astrocyte activation (<https://www.ebi.ac.uk/QuickGO/term/GO:0048143>)
GO:0071230 : cellular response to amino acid stimulus
(<https://www.ebi.ac.uk/QuickGO/term/GO:0071230>)
GO:0071364 : cellular response to epidermal growth factor stimulus
(<https://www.ebi.ac.uk/QuickGO/term/GO:0071364>)
GO:0071392 : cellular response to estradiol stimulus
(<https://www.ebi.ac.uk/QuickGO/term/GO:0071392>)
GO:0021795 : cerebral cortex cell migration
(<https://www.ebi.ac.uk/QuickGO/term/GO:0021795>)
GO:0016101 : diterpenoid metabolic process
(<https://www.ebi.ac.uk/QuickGO/term/GO:0016101>)
GO:0038128 : ERBB2 signaling pathway
(<https://www.ebi.ac.uk/QuickGO/term/GO:0038128>)

GO:0061029 : eyelid development in camera-type eye
(<https://www.ebi.ac.uk/QuickGO/term/GO:0061029>)

GO:0042743 : hydrogen peroxide metabolic process
(<https://www.ebi.ac.uk/QuickGO/term/GO:0042743>)

GO:0010960 : magnesium ion homeostasis
(<https://www.ebi.ac.uk/QuickGO/term/GO:0010960>)

GO:1905208 : negative regulation of cardiocyte differentiation
(<https://www.ebi.ac.uk/QuickGO/term/GO:1905208>)

GO:0042059 : negative regulation of epidermal growth factor receptor signaling pathway
(<https://www.ebi.ac.uk/QuickGO/term/GO:0042059>)

GO:1901185 : negative regulation of ERBB signaling pathway
(<https://www.ebi.ac.uk/QuickGO/term/GO:1901185>)

GO:0045930 : negative regulation of mitotic cell cycle
(<https://www.ebi.ac.uk/QuickGO/term/GO:0045930>)

GO:0045746 : negative regulation of Notch signaling pathway
(<https://www.ebi.ac.uk/QuickGO/term/GO:0045746>)

GO:0042177 : negative regulation of protein catabolic process
(<https://www.ebi.ac.uk/QuickGO/term/GO:0042177>)

GO:0045780 : positive regulation of bone resorption
(<https://www.ebi.ac.uk/QuickGO/term/GO:0045780>)

GO:0045739 : positive regulation of DNA repair
(<https://www.ebi.ac.uk/QuickGO/term/GO:0045739>)

GO:0010750 : positive regulation of nitric oxide mediated signal transduction
(<https://www.ebi.ac.uk/QuickGO/term/GO:0010750>)

GO:1903800 : positive regulation of production of miRNAs involved in gene silencing by miRNA (<https://www.ebi.ac.uk/QuickGO/term/GO:1903800>)

GO:1902722 : positive regulation of prolactin secretion
(<https://www.ebi.ac.uk/QuickGO/term/GO:1902722>)

GO:1900020 : positive regulation of protein kinase C activity
(<https://www.ebi.ac.uk/QuickGO/term/GO:1900020>)

GO:1903078 : positive regulation of protein localization to plasma membrane
(<https://www.ebi.ac.uk/QuickGO/term/GO:1903078>)

GO:0051205 : protein insertion into membrane
(<https://www.ebi.ac.uk/QuickGO/term/GO:0051205>)

GO:0050999 : regulation of nitric-oxide synthase activity
(<https://www.ebi.ac.uk/QuickGO/term/GO:0050999>)

GO:0050730 : regulation of peptidyl-tyrosine phosphorylation
(<https://www.ebi.ac.uk/QuickGO/term/GO:0050730>)

GO:0014066 : regulation of phosphatidylinositol 3-kinase signaling
(<https://www.ebi.ac.uk/QuickGO/term/GO:0014066>)

GO:0051592 : response to calcium ion
(<https://www.ebi.ac.uk/QuickGO/term/GO:0051592>)

GO:0033590 : response to cobalamin
(<https://www.ebi.ac.uk/QuickGO/term/GO:0033590>)

GO:0033594 : response to hydroxyisoflavone
(<https://www.ebi.ac.uk/QuickGO/term/GO:0033594>)

GO:0070141 : response to UV-A (<https://www.ebi.ac.uk/QuickGO/term/GO:0070141>)

GO - Cellular Component

GO:0005886 : plasma membrane (<https://www.ebi.ac.uk/QuickGO/term/GO:0005886>)

GO:0016324 : apical plasma membrane
(<https://www.ebi.ac.uk/QuickGO/term/GO:0016324>)

GO:0005737 : cytoplasm (<https://www.ebi.ac.uk/QuickGO/term/GO:0005737>)

GO:0005925 : focal adhesion (<https://www.ebi.ac.uk/QuickGO/term/GO:0005925>)

GO:0000139 : Golgi membrane (<https://www.ebi.ac.uk/QuickGO/term/GO:0000139>)

GO:0016020 : membrane (<https://www.ebi.ac.uk/QuickGO/term/GO:0016020>)

GO:0045121 : membrane raft (<https://www.ebi.ac.uk/QuickGO/term/GO:0045121>)

GO:0005887 : integral component of plasma membrane
(<https://www.ebi.ac.uk/QuickGO/term/GO:0005887>)

GO:0005634 : nucleus (<https://www.ebi.ac.uk/QuickGO/term/GO:0005634>)

GO:0043235 : receptor complex (<https://www.ebi.ac.uk/QuickGO/term/GO:0043235>)

GO:0032991 : protein-containing complex
(<https://www.ebi.ac.uk/QuickGO/term/GO:0032991>)

GO:0005615 : extracellular space (<https://www.ebi.ac.uk/QuickGO/term/GO:0005615>)

GO:0005768 : endosome (<https://www.ebi.ac.uk/QuickGO/term/GO:0005768>)

GO:0016323 : basolateral plasma membrane
(<https://www.ebi.ac.uk/QuickGO/term/GO:0016323>)

GO:0010008 : endosome membrane
(<https://www.ebi.ac.uk/QuickGO/term/GO:0010008>)

GO:0045202 : synapse (<https://www.ebi.ac.uk/QuickGO/term/GO:0045202>)

GO:0009986 : cell surface (<https://www.ebi.ac.uk/QuickGO/term/GO:0009986>)

GO:0031965 : nuclear membrane (<https://www.ebi.ac.uk/QuickGO/term/GO:0031965>)

GO:0005789 : endoplasmic reticulum membrane
(<https://www.ebi.ac.uk/QuickGO/term/GO:0005789>)

GO:0030139 : endocytic vesicle (<https://www.ebi.ac.uk/QuickGO/term/GO:0030139>)

GO:0009925 : basal plasma membrane
(<https://www.ebi.ac.uk/QuickGO/term/GO:0009925>)

GO:0031901 : early endosome membrane
(<https://www.ebi.ac.uk/QuickGO/term/GO:0031901>)

GO:0048471 : perinuclear region of cytoplasm
 (https://www.ebi.ac.uk/QuickGO/term/GO:0048471)
 GO:0030665 : clathrin-coated vesicle membrane
 (https://www.ebi.ac.uk/QuickGO/term/GO:0030665)
 GO:0097489 : multivesicular body, internal vesicle lumen
 (https://www.ebi.ac.uk/QuickGO/term/GO:0097489)
 GO:0070435 : Shc-EGFR complex (https://www.ebi.ac.uk/QuickGO/term/GO:0070435)

Presumptive Null

Unknown (https://www.gephebase.org/search-criteria?/and+Presumptive Null=^Unknown^#gephebase-summary-title)

Molecular Type

Unknown (https://www.gephebase.org/search-criteria?/and+Molecular Type=^Unknown^#gephebase-summary-title)

Aberration Type

Unknown (https://www.gephebase.org/search-criteria?/and+Aberration Type=^Unknown^#gephebase-summary-title)

Molecular Details of the Mutation

A>T associated SNP

Experimental Evidence

Association Mapping (https://www.gephebase.org/search-criteria?/and+Experimental Evidence=^Association Mapping^#gephebase-summary-title)

Main Reference

OPRM1 and EGFR contribute to skin pigmentation differences between Indigenous Americans and Europeans. (2012) (https://pubmed.ncbi.nlm.nih.gov/22198722)

Authors

Quillen EE; Bauchet M; Bigham AW; Delgado-Burbano ME; Faust FX; Klimentidis YC; Mao X; Stoneking M; Shriver MD

Abstract

Contemporary variation in skin pigmentation is the result of hundreds of thousands years of human evolution in new and changing environments. Previous studies have identified several genes involved in skin pigmentation differences among African, Asian, and European populations. However, none have examined skin pigmentation variation among Indigenous American populations, creating a critical gap in our understanding of skin pigmentation variation. This study investigates signatures of selection at 76 pigmentation candidate genes that may contribute to skin pigmentation differences between Indigenous Americans and Europeans. Analysis was performed on two samples of Indigenous Americans genotyped on genome-wide SNP arrays. Using four tests for natural selection--locus-specific branch length (LSBL), ratio of heterozygosities (InRH), Tajima's D difference, and extended haplotype homozygosity (EHH)--we identified 14 selection-nominated candidate genes (SNCGs). SNPs in each of the SNCGs were tested for association with skin pigmentation in 515 admixed Indigenous American and European individuals from regions of the Americas with high ground-level ultraviolet radiation. In addition to SLC24A5 and SLC45A2, genes previously associated with European/non-European differences in skin pigmentation, OPRM1 and EGFR were associated with variation in skin pigmentation in New World populations for the first time.

Additional References

RELATED GEPHE

Related Genes

14 (Agouti (ASIP), EIF2S2, GSS (glutathione synthetase), IRF4, Kit ligand, MC1R, MFSD12, Oca2, OPRM1, SLC24A5 (NCKX5), SLC45A2=MATP, TPCN2, tyrosinase (TYR), tyrosinase-related protein 1 (TYRP1)) (https://www.gephebase.org/search-criteria?/or+Taxon ID=^9606^/and+Trait=Coloration/and+groupHaplotypes=true#gephebase-summary-title)

Related Haplotypes

No matches found.

EXTERNAL LINKS

COMMENTS