

GEPHE SUMMARY

GPA1 (<a +gpa1+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+GeneGephebase=">https://www.gephebase.org/search-criteria?/and+GeneGephebase="+GPA1+"#gephebase-summary-title)		Gephebase Gene	GP00000410	GepheID
Published		Entry Status	Martin	Main curator

PHENOTYPIC CHANGE

Trait #1	Trait Category
Physiology (<a +physiology+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+TraitCategory=">https://www.gephebase.org/search-criteria?/and+TraitCategory="+Physiology+"#gephebase-summary-title)	Trait
Pheromone response (<a +pheromone+response+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait=">https://www.gephebase.org/search-criteria?/and+Trait="+Pheromone+response+"#gephebase-summary-title)	Trait State in Taxon A
Saccharomyces cerevisiae	Trait State in Taxon B
Saccharomyces cerevisiae	

Trait #2	Trait Category
Physiology (<a +physiology+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+TraitCategory=">https://www.gephebase.org/search-criteria?/and+TraitCategory="+Physiology+"#gephebase-summary-title)	Trait
Cell elongation (<a +cell+elongation+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait=">https://www.gephebase.org/search-criteria?/and+Trait="+Cell+elongation+"#gephebase-summary-title)	Trait State in Taxon A
-	Trait State in Taxon B
-	

Data not curated		Ancestral State		
Domesticated (<a +domesticated+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+TaxonomicStatus=">https://www.gephebase.org/search-criteria?/and+TaxonomicStatus="+Domesticated+"#gephebase-summary-title)		Taxonomic Status		
Taxon A		Taxon B		
Saccharomyces cerevisiae (<a +saccharomyces+cerevisiae+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Saccharomyces+cerevisiae+"#gephebase-summary-title)		Saccharomyces cerevisiae (<a +saccharomyces+cerevisiae+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Saccharomyces+cerevisiae+"#gephebase-summary-title)		Latin Name
baker’s yeast		baker’s yeast		Common Name
Saccharomyces capensis; Saccharomyces italicus; Saccharomyces oviformis; Saccharomyces uvarum var. melibiosus; baker’s yeast; S. cerevisiae; brewer’s yeast; ATCC 18824; ATCC:18824; CBS 1171; CBS:1171; NRRL Y-12632; NRRL:Y:12632; Saccharomyces cerevisiae; Saccharomyce cerevisiae; Saccharomyes cerevisiae; Sccharomyces cerevisiae		Saccharomyces capensis; Saccharomyces italicus; Saccharomyces oviformis; Saccharomyces uvarum var. melibiosus; baker’s yeast; S. cerevisiae; brewer’s yeast; ATCC 18824; ATCC:18824; CBS 1171; CBS:1171; NRRL Y-12632; NRRL:Y:12632; Saccharomyces cerevisiae; Saccharomyce cerevisiae; Saccharomyes cerevisiae; Sccharomyces cerevisiae		Synonyms
species		species		Rank
cellular organisms; Eukaryota; Opisthokonta; Fungi; Dikarya; Ascomycota; saccharomyceta; Saccharomycotina; Saccharomycetes; Saccharomycetales; Saccharomycetaceae; Saccharomyces		cellular organisms; Eukaryota; Opisthokonta; Fungi; Dikarya; Ascomycota; saccharomyceta; Saccharomycotina; Saccharomycetes; Saccharomycetales; Saccharomycetaceae; Saccharomyces		Lineage
Saccharomyces () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4930)		Saccharomyces () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4930)		Parent
4932 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4932)		4932 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=4932)		NCBI Taxonomy ID
is Taxon A an Intraspecies?		is Taxon B an Intraspecies?		
No		No		

GENOTYPIC CHANGE

GPA1	Generic Gene Name	UniProtKB Saccharomyces cerevisiae (strain ATCC 204508 / S288c)	
	Synonyms	P08539 (http://www.uniprot.org/uniprot/P08539)	GenebankID or UniProtKB
CDC70; DAC1; SCG1; YHR005C		M15867 (https://www.ncbi.nlm.nih.gov/nuccore/M15867)	
	String		
4932.YHR005C			
(http://string-db.org/newstring.cgi/show_network_section.pl?identifier=4932.YHR005C)			
	Sequence Similarities		
Belongs to the G-alpha family. G(q) subfamily.			
	GO - Molecular Function		
GO:0046872 : metal ion binding (https://www.ebi.ac.uk/QuickGO/term/GO:0046872)			
GO:0005525 : GTP binding (https://www.ebi.ac.uk/QuickGO/term/GO:0005525)			
GO:0001664 : G protein-coupled receptor binding (https://www.ebi.ac.uk/QuickGO/term/GO:0001664)			
GO:0031681 : G-protein beta-subunit binding (https://www.ebi.ac.uk/QuickGO/term/GO:0031681)			
GO:0031683 : G-protein beta/gamma-subunit complex binding (https://www.ebi.ac.uk/QuickGO/term/GO:0031683)			
GO:0003924 : GTPase activity (https://www.ebi.ac.uk/QuickGO/term/GO:0003924)			
	GO - Biological Process		
GO:0000754 : adaptation of signaling pathway by response to pheromone involved in conjugation with cellular fusion (https://www.ebi.ac.uk/QuickGO/term/GO:0000754)			
GO:0007188 : adenylate cyclase-modulating G protein-coupled receptor signaling pathway (https://www.ebi.ac.uk/QuickGO/term/GO:0007188)			
GO:0048017 : inositol lipid-mediated signaling (https://www.ebi.ac.uk/QuickGO/term/GO:0048017)			
GO:0000742 : karyogamy involved in conjugation with cellular fusion (https://www.ebi.ac.uk/QuickGO/term/GO:0000742)			
GO:0000743 : nuclear migration involved in conjugation with cellular fusion (https://www.ebi.ac.uk/QuickGO/term/GO:0000743)			
GO:0000750 : pheromone-dependent signal transduction involved in conjugation with cellular fusion (https://www.ebi.ac.uk/QuickGO/term/GO:0000750)			
GO:0071701 : regulation of MAPK export from nucleus (https://www.ebi.ac.uk/QuickGO/term/GO:0071701)			
	GO - Cellular Component		
GO:0005886 : plasma membrane (https://www.ebi.ac.uk/QuickGO/term/GO:0005886)			
GO:0005768 : endosome (https://www.ebi.ac.uk/QuickGO/term/GO:0005768)			
GO:0010008 : endosome membrane (https://www.ebi.ac.uk/QuickGO/term/GO:0010008)			
GO:0005834 : heterotrimeric G-protein complex (https://www.ebi.ac.uk/QuickGO/term/GO:0005834)			
No (https://www.gephebase.org/search-criteria?/and+Presumptive Null=~No~#gephebase-summary-title)		Presumptive Null	
Coding (https://www.gephebase.org/search-criteria?/and+Molecular Type=~Coding~#gephebase-summary-title)		Molecular Type	
SNP (https://www.gephebase.org/search-criteria?/and+Aberration Type=~SNP~#gephebase-summary-title)		Aberration Type	
Nonsynonymous		SNP Coding Change	
Ser469Ile		Molecular Details of the Mutation	
Linkage Mapping (https://www.gephebase.org/search-criteria?/and+Experimental Evidence=~Linkage Mapping~#gephebase-summary-title)		Experimental Evidence	
	Taxon A	Taxon B	Position
Codon	-	-	-
Amino-acid	-	-	-
Trans-acting regulatory variation in Saccharomyces cerevisiae and the role of transcription factors. (2003) (https://pubmed.ncbi.nlm.nih.gov/12897782)		Main Reference	
Yvert G; Brem RB; Whittle J; Akey JM; Foss E; Smith EN; Mackelprang R; Kruglyak L		Authors	
Natural genetic variation can cause significant differences in gene expression, but little is known about the polymorphisms that affect gene regulation. We analyzed regulatory variation in a cross between laboratory and wild strains of Saccharomyces cerevisiae. Clustering and linkage analysis defined groups of coregulated genes and the loci involved in their regulation. Most expression differences mapped to trans-acting loci. Positional cloning and functional assays showed that polymorphisms in GPA1 and AMN1 affect expression of genes involved in pheromone response and daughter cell separation, respectively. We also asked whether particular classes of genes were more likely to contain trans-regulatory polymorphisms. Notably, transcription factors showed no enrichment, and trans-regulatory variation seems to be broadly dispersed across classes of genes with different molecular functions.		Abstract	
Genetic complexity and quantitative trait loci mapping of yeast morphological traits. (2007) (https://pubmed.ncbi.nlm.nih.gov/17319748)		Additional References	

RELATED GEPHE

No matches found.

No matches found.

Related Genes

Related Haplotypes

EXTERNAL LINKS

COMMENTS