

GEPHE SUMMARY

	Gephebase Gene		GepheID
AMN1 (https://www.gephebase.org/search-criteria?/and+GeneGephebase=^AMN1^#gephebase-summary-title)		GP00000082	
	Entry Status	Martin	Main curator
Published			

PHENOTYPIC CHANGE

	Trait Category		
Physiology (https://www.gephebase.org/search-criteria?/and+TraitCategory=^Physiology^#gephebase-summary-title)			
	Trait		
Cell separation (https://www.gephebase.org/search-criteria?/and+Trait=^Cellseparation^#gephebase-summary-title)			
	Trait State in Taxon A		
Saccharomyces cerevisiae			
	Trait State in Taxon B		
Saccharomyces cerevisiae			
	Ancestral State		
Data not curated			
	Taxonomic Status		
Domesticated (https://www.gephebase.org/search-criteria?/and+TaxonomicStatus=^Domesticated^#gephebase-summary-title)			
Taxon A		Taxon B	
	Latin Name		Latin Name
Saccharomyces cerevisiae (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Saccharomycescerevisiae^#gephebase-summary-title)		Saccharomyces cerevisiae (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Saccharomycescerevisiae^#gephebase-summary-title)	
	Common Name		Common Name
baker’s yeast		baker’s yeast	
	Synonyms		Synonyms
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	
	Rank		Rank
species		species	
	Lineage		Lineage
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	
	Parent		Parent
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)	
	NCBI Taxonomy ID		NCBI Taxonomy ID
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)	
	is Taxon A an Intraspecies?		is Taxon B an Intraspecies?
No		No	

GENOTYPIC CHANGE

	Generic Gene Name		UniProtKB Saccharomyces cerevisiae (strain ATCC 204508 / S288c)
AMN1		P38285 (http://www.uniprot.org/uniprot/P38285)	
	Synonyms		GenebankID or UniProtKB
CST13; ICS4; YBR158W; YBR1208		AY723760 (https://www.ncbi.nlm.nih.gov/nucore/AY723760)	
	String		
4932.YBR158W (http://string-db.org/newstring.cgi/show_network_section.pl?identifier= 4932.YBR158W)			
	Sequence Similarities		
Belongs to the AMN1 family.			
	GO - Molecular Function		
-			
	GO - Biological Process		
GO:0016567 : protein ubiquitination (https://www.ebi.ac.uk/QuickGO/term/GO:0016567)			
GO:0051301 : cell division (https://www.ebi.ac.uk/QuickGO/term/GO:0051301)			
GO:0007093 : mitotic cell cycle checkpoint (https://www.ebi.ac.uk/QuickGO/term/GO:0007093)			

GO:0001100 : negative regulation of exit from mitosis
(<https://www.ebi.ac.uk/QuickGO/term/GO:0001100>)
GO:0031146 : SCF-dependent proteasomal ubiquitin-dependent protein catabolic process
(<https://www.ebi.ac.uk/QuickGO/term/GO:0031146>)
GO:0006511 : ubiquitin-dependent protein catabolic process
(<https://www.ebi.ac.uk/QuickGO/term/GO:0006511>)

GO - Cellular Component

GO:0005737 : cytoplasm (<https://www.ebi.ac.uk/QuickGO/term/GO:0005737>)
GO:0005634 : nucleus (<https://www.ebi.ac.uk/QuickGO/term/GO:0005634>)
GO:0005933 : cellular bud (<https://www.ebi.ac.uk/QuickGO/term/GO:0005933>)
GO:0019005 : SCF ubiquitin ligase complex
(<https://www.ebi.ac.uk/QuickGO/term/GO:0019005>)

Presumptive Null

No (<https://www.gephebase.org/search-criteria?/and+Presumptive Null=~No^#gephebase-summary-title>)

Molecular Type

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

Aberration Type

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

SNP Coding Change

Nonsynonymous

Molecular Details of the Mutation

D368V

Experimental Evidence

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

	Taxon A	Taxon B	Position
Codon	-	-	-
Amino-acid	-	-	-

Main Reference

Trans-acting regulatory variation in *Saccharomyces cerevisiae* and the role of transcription factors. (2003) (<https://pubmed.ncbi.nlm.nih.gov/12897782>)

Authors

Yvert G; Brem RB; Whittle J; Akey JM; Foss E; Smith EN; Mackelprang R; Kruglyak L

Abstract

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.

Additional References

RELATED GEPHE

Related Genes

1 (FLO1) (<https://www.gephebase.org/search-criteria?/or+Taxon ID=~4932^/and+Trait=Cell separation/and+groupHaplotypes=true#gephebase-summary-title>)

Related Haplotypes

No matches found.

EXTERNAL LINKS

COMMENTS