

Selected publications

Original articles

Ramírez-Zavala B, Krüger I, Dunker C, Jacobsen ID, **Morschhäuser J** (2022)

The protein kinase Ire1 has a Hac1-independent essential role in iron uptake and virulence of Candida albicans

PLoS Pathog 18:e1010283

Omran RP, Ramírez-Zavala B, Tebung WA, Yao S, Feng J, Law C, Dumeaux V, **Morschhäuser J**, Whiteway M (2022)

The zinc cluster transcription factor Rha1 is a positive filamentation regulator in Candida albicans

Genetics 220:iyab155

Ramírez-Zavala B, Mottola A, Krüger I, **Morschhäuser J** (2021)

A suppressor mutation in the β -subunit Kis1 restores functionality of the SNF1 complex in Candida albicans snf4 Δ mutant

mSphere 6:e00929-21

Mottola A, Ramírez-Zavala B, Hünninger K, Kurzai O, **Morschhäuser J** (2021)

The zinc cluster transcription factor Czf1 regulates cell wall architecture and integrity in Candida albicans

Mol Microbiol 116:483-497

Mottola A, Schwanfelder S, **Morschhäuser J** (2020)

Generation of viable Candida albicans mutants lacking the “essential” protein kinase Snf1 by inducible gene deletion

mSphere 5:e00805-20

Mayr E-M, Ramírez-Zavala B, Krüger I, **Morschhäuser J** (2020)

A zinc cluster transcription factor contributes to the intrinsic fluconazole resistance of Candida auris

mSphere 5:e00279-20

Ruben S, Garbe E, Mogavero S, Albrecht-Eckardt D, Hellwig D, Häder A, Krüger T, Gerth K, Jacobsen ID, Elshafee O,

Brunke S, Hünninger K, Kniemeyer O, Brakhage AA, **Morschhäuser J**, Hube B, Vylkova S, Kurzai O, Martin R. (2020)

Ahr1 and Tup1 contribute to the transcriptional control of virulence-associated genes in Candida albicans

mBio 11:e00206-20

Mottola A, **Morschhäuser J** (2019)

An intragenic recombination event generates a Snf4-independent form of the essential protein kinase Snf1 in Candida albicans

mSphere 4:e00352-19

Popp C, Ramírez-Zavala B, Schwanfelder S, Krüger I, **Morschhäuser J** (2019)

Evolution of fluconazole-resistant Candida albicans strains by drug-induced mating competence and parasexual recombination

mBio 10:e02740-18

Ramírez-Zavala B, Manz H, Englert F, Rogers PD, **Morschhäuser J** (2018)

A hyperactive form of the zinc cluster transcription factor Stb5 causes YOR1 overexpression and beauvericin resistance in Candida albicans

Antimicrob Agents Chemother 62:e01655-18

Allert S, Förster TM, Svensson C-M, Richardson JP, Pawlik T, Hebecker B, Rudolphi S, Juraschitz M, Schaller M, Blagojevic M, **Morschhäuser J**, Figge MT, Jacobsen ID, Naglik JR, Kasper L, Mogavero S, Hube B (2018)

Candida albicans-induced epithelial damage mediates translocation through intestinal barriers

mBio 9:e00915-18

Hampe IAI, Friedman J, Edgerton M, **Morschhäuser J** (2017)

An acquired mechanism of antifungal drug resistance simultaneously enables Candida albicans to escape from intrinsic host defenses

PLoS Pathog 13:e1006655

Popp C, Hampe IAI, Hertlein T, Ohlsen K, Rogers PD, **Morschhäuser J** (2017) *Competitive fitness of fluconazole-resistant clinical Candida albicans strains*

Antimicrob Agents Chemother 61:e00584-17

Ramírez-Zavala B, Mottola A, Haubenreißer J, Schneider S, Allert S, Brunke S, Ohlsen K, Hube B, **Morschhäuser J** (2017) *The Snf1-activating kinase Sak1 is a key regulator of metabolic adaptation and in vivo fitness of Candida albicans*

Mol Microbiol 104:989-1007

Ene IV, Lohse MB, Vladu AV, **Morschhäuser J**, Johnson AD, Bennett RJ (2016)

Phenotypic profiling reveals that Candida albicans opaque cells represent a metabolically specialized cell state compared to default white cells

mBio 7:e01269-16

Lohse MB, Ene IV, Craik VB, Hernday AD, Mancera E, **Morschhäuser J**, Bennett RJ, Johnson AD (2016) *Systematic genetic screen for transcriptional regulators of the Candida albicans white-opaque switch*

Genetics 203:1679-1692

Tebung WA, Choudhury BI, Tebbji F, **Morschhäuser J**, Whiteway M (2016)

Rewiring of the Ppr1 zinc cluster transcription factor from purine catabolism to pyrimidine biogenesis in the Saccharomycetaceae

Curr Biol 26:1677-1687

Schneider S, **Morschhäuser J** (2015)

Induction of Candida albicans drug resistance genes by hybrid zinc cluster transcription factors

Antimicrob Agents Chemother 59:558-569

Ramírez-Zavala B, Mogavero S, Schöller E, Sasse C, Rogers PD, Morschhäuser J (2014)

SAGA/ADA complex subunit Ada2 is required for Cap1-, but not Mrr1-mediated upregulation of the Candida albicans multidrug efflux pump MDR1

Antimicrob Agents Chemother 58:5102-5110

Pannanusorn S, Ramírez-Zavala B, Lünsdorf H, Agerbert B, Morschhäuser J, Römling U (2014) *Characterization of biofilm formation and the role of BCR1 in clinical isolates of Candida parapsilosis*

Eukaryot Cell 13:438-451

Ramírez-Zavala B, Weyler M, Gildor T, Schmauch C, Kornitzer D, Arkowitz R, **Morschhäuser J** (2013)

Activation of the Cph1-dependent MAP kinase signaling pathway induces white-opaque switching in Candida albicans

PLoS Pathog 9:e1003696

Schillig R, Morschhäuser J (2013)

Analysis of a fungus-specific transcription factor family, the Candida albicans zinc cluster proteins, by artificial activation

Mol Microbiol 89:1003-1017

Dunkel N, Hertlein T, Franz R, Reuß O, Sasse C, Schäfer T, Ohlsen T, **Morschhäuser J** (2013)

Role of different peptide transporters in nutrient acquisition in Candida albicans

Eukaryot Cell 12:520-528

Sasse C, Hasenberg M, Weyler M, Gunzer M, **Morschhäuser J** (2013)

White-opaque switching of Candida albicans allows immune evasion in an environment-dependent fashion

Eukaryot Cell 12:50-58

Sasse C, Dunkel N, Schäfer T, Schneider S, Dierolf F, Ohlsen K, **Morschhäuser J** (2012)

The stepwise acquisition of fluconazole resistance mutations causes a gradual loss of fitness in Candida albicans

Mol Microbiol 86:539-556

Sasse C, Schillig R, Reimund A, Merk J, **Morschhäuser J** (2012)

Inducible and constitutive activation of two polymorphic promoter alleles of the Candida albicans multidrug efflux pump MDR1

Antimicrob Agents Chemother 56:4490-4494

Schubert S, Popp C, Rogers PD, **Morschhäuser J** (2011)

Functional dissection of a Candida albicans zinc cluster transcription factor, the multidrug resistance regulator Mrr1

Eukaryot Cell 10:1110-1121

Schubert S, Barker KS, Znaidi S, Schneider S, Dierolf F, Dunkel N, Aid M, Boucher G, Rogers PD, Raymond M, **Morschhäuser J** (2011)

Regulation of efflux pump expression and drug resistance by the transcription factors Mrr1, Upc2, and Cap1 in Candida albicans

Antimicrob Agents Chemother 55:2212-2223

Mogavero S, Tavanti A, Senesi S, Rogers PD, **Morschhäuser J** (2011)

Differential requirement of the transcription factor Mcm1 for activation of the Candida albicans multidrug efflux pump MDR1 by its regulators Mrr1 and Cap1

Antimicrob Agents Chemother 55:2061-2066

Neuhäuser B, Dunkel N, Satheesh SV, **Morschhäuser J** (2011)

Role of the Npr1 kinase in ammonium transport and signaling by the ammonium permease Mep2 in Candida albicans

Eukaryot Cell 10:332-342

Dunkel N, **Morschhäuser J** (2011)

Loss of heterozygosity at an unlinked genomic locus is responsible for the phenotype of a Candida albicans sap4Δ sap5Δ sap6Δ mutant

Eukaryot Cell 10:54-62

Heilmann CJ, Schneider S, Barker KS, Rogers PD, **Morschhäuser J** (2010)

An A643T mutation in the transcription factor Upc2p causes constitutive ERG11 upregulation and increased fluconazole resistance in Candida albicans

Antimicrob Agents Chemother 54:353-359

Dabas N, Schneider S, **Morschhäuser J** (2009)

Mutational analysis of the Candida albicans ammonium permease Mep2p reveals residues required for ammonium transport and signaling

Eukaryot Cell 8:147-160

Schubert S, Rogers PD, **Morschhäuser J** (2008)

Gain-of-function mutations in the transcription factor MRR1 are responsible for overexpression of the MDR1 efflux pump in fluconazole-resistant Candida dubliniensis strains

Antimicrob Agents Chemother 52:4274-4280

Dunkel N, Blass J, Rogers PD, **Morschhäuser J** (2008)

Mutations in the multi-drug resistance regulator MRR1, followed by loss of heterozygosity, are the main cause of MDR1 overexpression in fluconazole-resistant Candida albicans strains

Mol Microbiol 69:827-840

- Dabas N, **Morschhäuser J** (2008)
A transcription factor regulatory cascade controls secreted aspartic protease expression in Candida albicans
Mol Microbiol 69:586-602
- Dunkel N, Liu TT, Barker KS, Homayouni R, **Morschhäuser J**, Rogers PD (2008)
A gain-of-function mutation in the transcription factor Upc2p causes upregulation of ergosterol biosynthesis genes and increased fluconazole resistance in a clinical Candida albicans isolate
Eukaryot Cell 7:1180-1190
- Ramírez-Zavala B, Reuß O, Park Y-N, Ohlsen K, **Morschhäuser J** (2008)
Environmental induction of white-opaque switching in Candida albicans
PLoS Pathog 4:e1000089
- Staib P, Lermann U, Blaß-Warmuth J, Degel B, Würzner R, Monod M, Schirmeister T, **Morschhäuser J** (2008)
Tetracycline-inducible expression of individual secreted aspartic proteases in Candida albicans allows isoenzyme-specific inhibitor screening
Antimicrob Agents Chemother 52:146-156
- Morschhäuser J**, Barker KS, Liu TT, Blaß-Warmuth J, Homayouni R, Rogers PD (2007)
The transcription factor Mrr1p controls expression of the MDR1 efflux pump and mediates multidrug resistance in Candida albicans
PLoS Pathog 3:e164
- Dabas N, **Morschhäuser J** (2007)
Control of ammonium permease expression and filamentous growth by the GATA transcription factors GLN3 and GAT1 in Candida albicans
Eukaryot Cell 6:875-888
- Hiller D, Stahl S, **Morschhäuser J** (2006)
Multiple cis-acting sequences mediate upregulation of the MDR1 efflux pump in a fluconazole-resistant clinical Candida albicans isolate
Antimicrob Agents Chemother 50:2300-2308
- Bader T, Schröppel K, Bentink S, Agabian N, Köhler G, **Morschhäuser J** (2006)
Role of calcineurin in stress resistance, morphogenesis, and virulence of a Candida albicans wild-type strain
Infect Immun 74:4366-4369
- Reuß O, **Morschhäuser J** (2006)
A family of oligopeptide transporters is required for growth of Candida albicans on proteins
Mol Microbiol 60:795-812
- Hiller D, Sanglard D, **Morschhäuser J** (2006)
Overexpression of the MDR1 gene is sufficient to confer increased resistance to toxic compounds in Candida albicans
Antimicrob Agents Chemother 50:1365-1371
- Park Y-N, **Morschhäuser J** (2005)
Candida albicans MTL α tup1 Δ mutants can reversibly switch to mating-competent, filamentous growth forms
Mol Microbiol 58:1288-1302
- Park Y-N, **Morschhäuser J** (2005)
Tetracycline-inducible gene expression and gene deletion in Candida albicans
Eukaryot Cell 4:1328-1342

Biswas K, **Morschhäuser J** (2005)

The Mep2p ammonium permease controls nitrogen starvation-induced filamentous growth in Candida albicans

Mol Microbiol 56:649-669

Staib P, **Morschhäuser J** (2005)

Differential expression of the NRG1 repressor controls species-specific regulation of chlamydospore development in Candida albicans and Candida dubliniensis

Mol Microbiol 55:637-652

Reuß O, Vik Å, Kolter R, **Morschhäuser J** (2004)

The SAT1 flipper, an optimized tool for gene disruption in Candida albicans

Gene 341:119-127

Staib P, Binder A, Kretschmar M, Nichterlein T, Schröppel K, **Morschhäuser J** (2004)

Tec1p-independent activation of a hypha-associated Candida albicans virulence gene during infection

Infect Immun 72:2386-2389

Bader T, Bodendorfer B, Schröppel K, **Morschhäuser J** (2003)

Calcineurin is essential for virulence in Candida albicans

Infect Immun 71:5344-5354

Michel S, Ushinsky S, Klebl B, Leberer E, Thomas D, Whiteway M, **Morschhäuser J** (2002)

Generation of conditional lethal Candida albicans mutants by inducible deletion of essential genes

Mol Microbiol 46:269-280

Staib P, Kretschmar M, Nichterlein T, Hof H, **Morschhäuser J** (2002)

Host versus in vitro signals and intrastrain allelic differences in the expression of a Candida albicans virulence gene

Mol Microbiol 44:1351-1366

Staib P, Kretschmar M, Nichterlein T, Hof H, **Morschhäuser J** (2002)

Transcriptional regulators Cph1p and Efg1p mediate activation of the Candida albicans virulence gene SAP5 during infection

Infect Immun 70:921-927

Wirsching S, Moran GP, Sullivan DJ, Coleman DC, **Morschhäuser J** (2001)

MDR1-mediated drug resistance in Candida dubliniensis

Antimicrob Agents Chemother 45:3416-3421

Strauß A, Michel S, **Morschhäuser J** (2001)

Analysis of phase-specific gene expression at the single-cell level in the white-opaque switching system of Candida albicans

J Bacteriol 183:3761-3769

Staib P, Moran GP, Sullivan DJ, Coleman DC, **Morschhäuser J** (2001)

Isogenic strain construction and gene targeting in Candida dubliniensis

J Bacteriol 183:2859-2865

Wirsching S, Michel S, **Morschhäuser J** (2000)

Targeted gene disruption in Candida albicans wild-type strains: the role of the MDR1 gene in fluconazole resistance of clinical Candida albicans isolates

Mol Microbiol 36:856-865

Staib P, Kretschmar M, Nichterlein T, Hof H, **Morschhäuser J** (2000)

Differential activation of a Candida albicans virulence gene family during infection

Wirsching S, Michel S, Köhler G, **Morschhäuser J** (2000)

Activation of the multiple drug resistance gene MDR1 in fluconazole-resistant, clinical Candida albicans strains is caused by mutations in a trans-regulatory factor

J Bacteriol 182:400-404

Morschhäuser J, Michel S, Staib P (1999)

Sequential gene disruption in Candida albicans by FLP-mediated site-specific recombination

Mol Microbiol 32:547-556

Staib P, Kretschmar M, Nichterlein T, Köhler G, Michel S, Hof H, Hacker J, **Morschhäuser J** (1999)

Host-induced, stage-specific virulence gene activation in Candida albicans during infection

Mol Microbiol 32:533-546

Franz R, Kelly SL, Lamb DC, Kelly DE, Ruhnke M, **Morschhäuser J** (1998)

Multiple molecular mechanisms contribute to a stepwise development of fluconazole resistance in clinical Candida albicans strains

Antimicrob Agents Chemother 42:3065-3072

Review articles

Morschhäuser J (2016)

The development of fluconazole resistance in Candida albicans - an example of microevolution of a fungal pathogen

J Microbiol 54:192-201

Morschhäuser J (2010)

Regulation of white-opaque switching in Candida albicans

Med Microbiol Immunol 199:165-172

Morschhäuser J (2010)

Regulation of multidrug resistance in pathogenic fungi

Fungal Genet Biol 47:94-106

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Institut für Molekulare Infektionsbiologie | Josef-Schneider-Str. 2/Bau D15 | 97080 Würzburg | DEUTSCHLAND