

Publications

Bruch A*, Lazarova V*, Krueger T, Schaeuble S, Kelani AA, Lehenberger P, Kniemeyer O, Panagiotou G, Blango MG (2024) Mod5 mediates a molecular trade-off between optimal gene expression and antifungal resistance. *bioRxiv* [Preprint]

Müller R, König A, Groth S, Zarnowski R, Visser C, Handrianz T, Maufrais C, Krüger T, Himmel M, Lee S, Priest EL, Yildirim D, Richardson JP, Blango MG, Bognoux ME, Kniemeyer O, d'Enfert C, Brakhage AA, Andes DR, Trümper V, Nehls C, Kasper L, Mogavero S, Gutschmann T, Naglik JR, Allert S, Hube B (2024) Secretion of the fungal toxin candidalysin is dependent on conserved precursor peptide sequences. *Nat Microbiol* 9(3), 669-683.

Bigalke A, Krüger T, Jia LJ, Kniemeyer O, Brakhage AA (2023) Pathoproteomik des humanpathogenen Pilzes *Aspergillus fumigatus*. *BIOspektrum* (3), 269-272.

Garloff V, Krüger T, Brakhage A, Rubio I (2023) Control of TurboID-dependent biotinylation intensity in proximity ligation screens. *J Proteomics* 279, 104886.

Jia LJ, Rafiq M, Radosa L, Hortschansky P, Cunha C, Cseresnyés Z, Krüger T, Schmidt F, Heinekamp T, Straßburger M, Loeffler B, Doenst T, Lacerda JF, Campos A, Figge MT, Carvalho A, Kniemeyer O, Brakhage AA[#] (2023) *Aspergillus fumigatus* hijacks human p11 to redirect fungal-containing phagosomes to non-degradative pathway. *Cell Host Microbe* 31(3), 373-388.e10.

Kelani AA, Bruch A, Riviuccio F, Visser C, Krüger T, Weaver D, Pan X, Schaeuble S, Panagiotou G, Kniemeyer O, Bromley MJ, Bowyer P, Barber AE, Brakhage AA, Blango MG (2023) Disruption of the *A. fumigatus* RNA interference machinery alters the conidial transcriptome. *RNA* 29(7), 1033-1050.

Krespach MKC, Stroe MC, Netzker T, Rosin M, Zehner LM, Komor AJ, Beilmann JM, Krüger T, Scherlach K, Kniemeyer O, Schroeckh V, Hertweck C, Brakhage AA (2023) *Streptomyces* polyketides mediate bacteria-fungi interactions across soil environments. *Nat Microbiol* 8(7), 1348-1361.

Ramírez-Zavala B, Betsova D, Schwanfelder S, Krüger I, Mottola A, Krüger T, Kniemeyer O, Brakhage AA, Morschhäuser J (2023) Multiple phosphorylation sites regulate the activity of the repressor Mig1 in *Candida albicans*. *mSphere* 8(6), e0054623.

Sala A, Ardizzoni A, Spaggiari L, Vaidya N, van der Schaaf J, Rizzato C, Cermelli C, Mogavero S, Krüger T, Himmel M, Kniemeyer O, Brakhage AA, King BL, Lupetti A, Comar M, de Seta F, Tavanti A, Blasi E, Wheeler RT, Pericolini E (2023) A new phenotype in *Candida*-epithelial cell interaction distinguishes colonization-versus vulvovaginal candidiasis-associated strains. *mBio* 14(2), e0010723.

Wein P, Dornblut K, Herkersdorf S, Krüger T, Molloy EM, Brakhage AA, Hoffmeister D, Hertweck C (2023) Bacterial secretion systems contribute to rapid tissue decay in button mushroom soft rot disease. *mBio* 14(4), e0078723.

Böttcher B, Driesch D, Krüger T, Garbe E, Gerwien F, Kniemeyer O, Brakhage AA, Vylkova S (2022) Impaired amino acid uptake leads to global metabolic imbalance of *Candida albicans* biofilms. *NPJ Biofilms Microbiomes* 8(1), 78.

Brandt P, Gerwien F, Wagner L, Krüger T, Ramírez-Zavala B, Mirhakkak MH, Schäuble S, Kniemeyer O, Panagiotou G, Brakhage AA, Morschhäuser J, Vylkova S (2022) *Candida albicans* SR-like protein kinases regulate different cellular processes: Sky1 is involved in control of ion homeostasis, while Sky2 is important for dipeptide utilization. *Front Cell Infect Microbiol* 12, 850531.

Harpke M, Pietschmann S, Ueberschaar N, Krüger T, Kniemeyer O, Brakhage AA, Nietzsche S, Kothe E (2022) Salt and metal tolerance involves formation of guttation droplets in species of the *Aspergillus versicolor* complex. *Genes* 13(9), 1631.

Niemiec MJ, Kapitan M, Himmel M, Döll K, Krüger T, Köllner TG, Auge I, Kage F, Alteri CJ, Mobley HLT, Monsen T, Linde S, Nietzsche S, Kniemeyer O, Brakhage AA, Jacobsen ID (2022) Augmented enterocyte damage during *Candida albicans* and *Proteus mirabilis* coinfection. *Front Cell Infect Microbiol* 12, 866416.

Oelmüller R, Rouina H, Tseng YH, Nataraja KN, Shaanker RU, Krüger T, Kniemeyer O, Brakhage A (2022) Comparative secretome analyses of *Trichoderma*/Arabidopsis co-cultures identify proteins for salt stress, plant growth promotion, and root colonization. *Front Ecol Evol* 9, 808430.

Rafiq M, Riviuccio F, Zimmermann AK, Visser C, Bruch A, Krüger T, González Rojas K, Kniemeyer O, Blango MG, Brakhage AA (2022) PLB-985 neutrophil-like cells as a model to study *Aspergillus fumigatus* pathogenesis. *mSphere* 7(1), e0094021.

Raguž L, Peng CC, Rutaganira FUN, Krüger T, Stanišić A, Jautzus T, Kries H, Kniemeyer O, Brakhage AA, King N, Beemelmans C (2022) Total synthesis and functional evaluation of IORs, sulfonolipid-based inhibitors of cell differentiation in *Salpingoeca rosetta*. *Angew Chem Int Ed* 61(41), e202209105.

Tseng YH, Scholz SS, Fliegmann J, Krüger T, Gandhi A, Furch ACU, Kniemeyer O, Brakhage AA, Oelmüller R (2022) CORK1, a LRR-malectin receptor kinase, is required for cellooligomer-induced responses in *Arabidopsis thaliana*. *Cells* 11(19), 960.

de Assis LJ, Silva L, Bayram Ö, Dowling P, Kniemeyer O, Krüger T, Brakhage AA, Chen Y, Dong L, Tan K, Wong KH, Ries L, Goldman G (2021) Carbon catabolite repression in filamentous fungi is regulated by phosphorylation of the transcription factor CreA. *mBio* 12(1), e03146-20.

Herkersdorf S, Krüger T, Wein P, Löffler S, Fontaine T, Gressler M, Hertweck C, Brakhage AA, Hoffmeister D (2021) Bacterial cell wall-degrading enzymes induce basidiomycete natural product biosynthesis. *Environ Microbiol* 23(8), 4360-4371.

López-Berges MS, Scheven MT, Hortschansky P, Misslinger M, Baldin C, Gsaller F, Werner ER, Krüger T, Kniemeyer O, Weber J, Brakhage AA, Haas H (2021) The bZIP transcription factor HapX is post-translationally regulated to control iron homeostasis in *Aspergillus fumigatus*. *Int J Mol Sci* 22(14), 7739.

Mogavero S, Sauer FM, Brunke S, Allert S, Schulz D, Wisgott S, Jablonowski N, Elshafee O, Krüger T, Kniemeyer O, Brakhage AA, Naglik JR, Dolk E, Hube B (2021) Candidalysin delivery to the invasion pocket is critical for host epithelial damage induced by *Candida albicans*. *Cell Microbiol* 23(10), e13378.

Murry R, Traxler L, Pötschner J, Krüger T, Kniemeyer O, Krause K, Kothe E (2021) Inositol signaling in the basidiomycete fungus *Schizophyllum commune*. *J Fungi (Basel)* 7(6), 470.

Radosa S, Sprague JL, Lau SH, Tóth R, Linde J, Krüger T, Sprenger M, Kasper L, Westermann M, Kniemeyer O, Hube B, Brakhage AA, Gácsér A, Hillmann F (2021) The fungivorous amoeba *Protostelium aurantium* targets redox homeostasis and cell wall integrity during intracellular killing of *Candida parapsilosis*. *Cell Microbiol* 23(11), e13389.

Schalk F, Gostinčar C, Kreuzenbeck NB, Conlon BH, Sommerwerk E, Rabe P, Burkhardt I, Krüger T, Kniemeyer O, Brakhage AA, Gunde-Cimerman N, de Beer ZW, Dickschat JS, Poulsen M, Beemelmans C (2021) The termite fungal cultivar *Termitomyces* combines diverse enzymes and oxidative reactions for plant biomass conversion. *mBio* 12(3), e0355120.

Wich M, Greim S, Ferreira-Gomes M, Krüger T, Kniemeyer O, Brakhage AA, Jacobsen ID, Hube B, Jungnickel B (2021) Functionality of the human antibody response to *Candida albicans*. *Virulence* 12(1), 3137-3148.

Blango MG, Pschibul A, Riviaccio F, Krüger T, Rafiq M, Jia L, Zheng T, Goldmann M, Voltersen V, Li J, Panagiotou G, Kniemeyer O, Brakhage AA (2020) Dynamic surface proteomes of allergenic fungal conidia. *J Proteome Res* 19(5), 2092-2104.

Halder LD, Jo EAH, Hasan MZ, Ferreira-Gomes M, Krüger T, Westermann M, Palme DI, Rambach G, Beyersdorf N, Speth C, Jacobsen ID, Kniemeyer O, Jungnickel B, Zipfel PF, Skerka C (2020) Immune modulation by complement receptor 3-dependent human monocyte TGF- β 1-transporting vesicles. *Nat Commun* 11(1), 2331.

Hassan MIA, Kruse JM, Krüger T, Dahse HM, Cseresnyés Z, Blango MG, Slevogt H, Hörhold F, Ast V, König R, Figge MT, Kniemeyer O, Brakhage AA, Voigt K (2020) Functional surface proteomic profiling reveals the host heat-shock protein A8 as a mediator of *Lichtheimia corymbifera* recognition by murine alveolar macrophages. *Environ Microbiol* 22(9), 3722-3740.

Jia LJ, Krüger T, Blango MG, Eggeling Fv, Kniemeyer O, Brakhage AA (2020) Biotinylated surfome profiling identifies potential biomarkers for diagnosis and therapy of *Aspergillus fumigatus* infection. *mSphere* 5(4), e00535-20.

Kaiser A, Krüger T, Eiselt G, Bechler J, Kniemeyer O, Huber O, Schmidt M (2020) Identification of PARP-1, histone H1 and SIRT-1 as new regulators of breastcancer-related aromatase promoter I.3/II. *Cells* 9(2), 427.

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(2), e00206-20.

Shopova IA, Belyaev I, Dasari P, Jahreis S, Stroe MC, Cseresnyés Z, Zimmermann AK, Medyukhina A, Svensson C-M, Krüger T, Szeifert V, Nietzsche S, Conrad T, Blango MG, Kniemeyer O, von Lilienfeld-Toal M, Zipfel PF, Ligeti E, Figge MT, Brakhage AA (2020) Human neutrophils produce antifungal extracellular vesicles against *Aspergillus fumigatus*. *mBio* 11(2), e00596-20.

Stroe MC, Netzker T, Scherlach K, Krüger T, Hertweck C, Valiante V, Brakhage AA (2020) Targeted induction of a silent fungal gene cluster encoding the bacteria-specific germination inhibitor fumigermin. *eLife* 9, e52541.

Valsecchi I, Stephen-Victor E, Wong SSW, Karnam A, Sunde M, Guijarro JI, Rodríguez de

Francisco B, Krüger T, Kniemeyer O, Brown GD, Willment JA, Latgé JP, Brakhage AA, Bayry J, Aimanianda V (2020) The role of RodA-conserved cysteine residues in the *Aspergillus fumigatus* conidial surface organization. *J Fungi* 6(3), E151.

Misslinger M†, Scheven MT†, Hortschansky P, Sanchez Lopez-Berges M, Heiss K, Beckmann N, Heigl T, Hermann M, Krüger T, Kniemeyer O, Brakhage AA*, Haas H* †shared first authors, *corresponding authors (2019) The monothiol glutaredoxin GrxD is essential for sensing iron starvation in *Aspergillus fumigatus*. *PLOS Genetics* 15(9), e1008379.

Noßmann M, Boysen JM, Krüger T, König CC, Hillmann F, Munder T, Brakhage AA (2019) Yeast two-hybrid screening reveals a dual function for the histone acetyltransferase GcnE by controlling glutamine synthesis and development in *Aspergillus fumigatus*. *Curr Genet* 65(2), 523-538.

Satish S, Jiménez-Ortigosa C, Zhao Y, Lee MH, Dolgov E, Krüger T, Park S, Denning DW, Kniemeyer O, Brakhage AA, Perlin DS (2019) Stress-induced changes in the lipid microenvironment of β -(1,3)-d-glucan synthase cause clinically important Echinocandin resistance in *Aspergillus fumigatus*. *mBio* 10(3), e00779-19.

Shekhova E, Ivanova L, Krüger T, Stroe MC, Macheleidt J, Kniemeyer O, Brakhage AA (2019) Redox proteomic analysis reveals oxidative modifications of proteins by increased levels of intracellular reactive oxygen species during hypoxia adaptation of *Aspergillus fumigatus*. *Proteomics* 19(5), e1800339.

Conrad T*, Kniemeyer O, Henkel SG, Krüger T, Mattern DJ, Valiante V, Guthke R, Jacobsen ID, Brakhage AA, Vlaic S, Linde J (2018) Module-detection approaches for the integration of multilevel omics data highlight the comprehensive response of *Aspergillus fumigatus* to caspofungin. *BMC Syst Biol* 12(1), 88.

Hoffmann F, Umbreit C, Krüger T, Pelzel D, Ernst G, Kniemeyer O, Guntinas-Lichius O, Berndt A, von Eggeling F (2018) Identification of proteomic markers in head and neck cancer using MALDI-MS imaging, LC-MS/MS, and immunohistochemistry. *Proteomics Clin Appl* 31(1), e1700173.

Kurucz V, Krüger T, Antal K, Dietl AM, Haas H, Pócsi I, Kniemeyer O, Emri T (2018) Additional oxidative stress reroutes the global response of *Aspergillus fumigatus* to iron depletion. *BMC Genomics* 19(1), 357.

Richardson JP, Mogavero S, Moyes DL, Blagojevic M, Krüger T, Verma AH, Coleman BM, De La Cruz Diaz J, Schulz D, Ponde NO, Carrano G, Kniemeyer O, Wilson D, Bader O, Enoiu SI, Ho J, Kichik N, Gaffen SL, Hube B, Naglik JR (2018) Processing of *Candida albicans* Ece1p is critical for Candidalysin maturation and fungal virulence. *mBio* 9(1), e02178-17.

Schmidt H, Vlaic S, Krüger T, Schmidt F, Balkenhohl J, Dandekar T, Guthke R, Kniemeyer O, Heinekamp T, Brakhage AA (2018) Proteomics of *Aspergillus fumigatus* conidia-containing phagolysosomes identifies processes governing immune evasion. *Mol Cell Proteomics* 17(6), 1084-1096.

Thürich J, Meichsner D, Furch ACU, Pfalz J, Krüger T, Kniemeyer O, Brakhage AA, Oelmüller R (2018) *Arabidopsis thaliana* responds to colonisation of *Piriformospora indica* by secretion of symbiosis-specific proteins. *PLOS One* 13(12), e0209658.

Voltersen V, Blango MG, Herrmann S, Schmidt F, Heinekamp T, Strassburger M, Krüger T, Bacher P, Lothar J, Weiss E, Hünninger K, Liu H, Hortschansky P, Scheffold A, Loeffler J,

Krappmann S, Nietzsche S, Kurzai O, Einsele H, Kniemeyer O, Filler S, Reichard U, Brakhage AA (2018) Proteome analysis reveals the conidial surface protein CcpA essential for virulence of the pathogenic fungus *Aspergillus fumigatus*. *mBio* 9(5), e01557-18.

Luckas B, Krüger T, Röder K (2017) Phycotoxins and Food Safety In: Schrenk, D., Cartus, A. (Ed.) (eds.) Chemical Contaminants and Residues in Food (2017) in: Woodhead Publishing Series in Food Science, Technology and Nutrition 2nd edition. pp. 337-378. Elsevier, Woodhead Publishing. ISBN: 978-0-08-100674. (Review)

Pohlers S, Martin R, Krüger T, Hellwig D, Hänel F, Kniemeyer O, Saluz HP, Van Dijck, Ernst JF, Brakhage A, Mühlischlegel FA, Kurzai O (2017) Lipid signaling via Pkh1/2 regulates fungal CO₂ sensing through the kinase Sch9. *mBio* 8(1), e02211-16.

Shemesh E, Hanf B, Hagag S, Attias S, Shadkchan Y, Fichtman B, Harel A, Krüger T, Brakhage AA, Kniemeyer O, Osherov N (2017) Phenotypic and Proteomic Analysis of the *Aspergillus fumigatus* Δ PrtT, Δ XprG and Δ XprG/ Δ PrtT Protease-Deficient Mutants. *Front Microbiol* 8, 2490.

Zhang T, Wei W, Dirsch O, Krüger T, Kan C, Xie C, Kniemeyer O, Fang H, Settmacher U, Dahmen U (2017) Identification of Proteins Interacting with Cytoplasmic High-Mobility Group Box 1 during the Hepatocellular Response to Ischemia Reperfusion Injury. *Int J Mol Sci* 18(1), pii: E167.

Kniemeyer O, Ebel F, Krüger T, Bacher P, Scheffold A, Luo T, Strassburger M, Brakhage AA (2016) Immunoproteomics of *Aspergillus* for the development of biomarkers and immunotherapies. *Proteomics Clin Appl* 10(9-10), 910-921. (Review)

Luo T, Krüger T, Knüpfer U, Kasper L, Wielsch N, Hube B, Kortgen A, Bauer M, Giamarellos-Bourboulis EJ, Dimopoulos G, Brakhage AA, Kniemeyer O (2016) Immunoproteomic analysis of antibody responses to extracellular proteins of *Candida albicans* revealed the importance of glycosylation for antigen recognition. *J Proteome Res* 15(8), 2394-2406.

Moyes DL*, Wilson D*, Richardson JP*, Mogavero S*, Tang SX, Wernecke J, Höfs S, Gratacap RL, Robbins J, Runglall M, Murciano C, Blagojevic M, Thavaraj S, Förster TM, Hebecker B, Kasper L, Vizcay G, Iancu SI, Kichik N, Häder A, Kurzai O, Luo T, Krüger T, Kniemeyer O, Cota E, Bader O, Wheeler RT, Gutschmann T, Hube B, Naglik JR (2016) Candidalysin is a fungal peptide toxin critical for mucosal infection. *Nature* 532(7597), 64-68.

Baldin C, Valiante V, Krüger T, Schaffner L, Haas H, Kniemeyer O, Brakhage AA (2015) Comparative proteomics of a tor inducible *Aspergillus fumigatus* mutant reveals involvement of the Tor kinase in iron regulation. *Proteomics* 15(13), 2230-2243.

Heinekamp T, Schmidt H, Lapp K, Pätz V, Shopova I, Köster-Eiserfunke N, Krüger T, Kniemeyer O, Brakhage AA (2015) Interference of *Aspergillus fumigatus* with the immune response. *Semin Immunopathol* 37(2), 141-152. (Review)

Krüger T (2015) Biomarker for Amyotrophic Lateral Sclerosis (Motor Neurone Disease). In: Preedy, V. R., Patel, V. B. (eds.) Biomarkers in Disease: Methods, Discoveries and Applications. General Methods in Biomarker Research and their Applications. Springer. ISBN: 978-94-007-7695.

Krüger T, Luo T, Schmidt H, Shopova I, Kniemeyer O (2015) Challenges and Strategies for Proteome Analysis of the Interaction of Human Pathogenic Fungi with Host Immune Cells.

Proteomes 3(4), 467-495. (Review)

Opitz S, Hannika F, Krüger T, Rhode H (2014) The removal of Triton X-100 by dialysis is feasible!
Anal Bioanal Chem 407(4), 1107-1118.

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