

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, Bounoux 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.

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, Riveccio 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.

Martini GR, Tikhonova E, Rosati E, DeCelie MB, Sievers LK, Tran F, Lessing M, Bergfeld A, Hinz S, Nikolaus S, Kümpers J, Matysiak A, Hofmann P, Saggau C, Schneiders S, Kamps AK, Jacobs G, Lieb W, Maul J, Siegmund B, Seegers B, Hinrichsen H, Oberg HH, Wesch D, Bereswill S, Heimesaat MM, Rupp J, Kniemeyer O, Brakhage AA, Brunke S, Hube B, Aden K, Franke A, Iliev ID, Scheffold A, Schreiber S, Bacher P (2023) Selection of cross-reactive T cells by commensal and food-derived yeasts drives cytotoxic TH1 cell responses in Crohn's disease. *Nat Med* 29(10), 2602-2614.

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.

Schruefer S, Pschibul A, Wong SSW, Sae-Ong T, Wolf T, Schäuble S, Panagiotou G, Brakhage AA, Aimaniananda V, Kniemeyer O, Ebel F (2023) Distinct transcriptional responses to fludioxonil in *Aspergillus fumigatus* and its Δ tcsC and Δ skn7 mutants reveal a crucial role for Skn7 in the cell

wall reorganizations triggered by this antifungal. *BMC Genomics* 24(1), 684.

Schwarz C, Eschenhagen P, Schmidt H, Hohnstein T, Iwert C, Grehn C, Roehmel J, Steinke E, Stahl M, Lozza L, Tikhonova E, Rosati E, Stervbo U, Babel N, Mainz JG, Wisplinghoff H, Ebel F, Jia LJ, Blango MG, Hortschansky P, Brunke S, Hube B, Brakhage AA, Kniemeyer O, Scheffold A, Bacher P (2023) Antigen specificity and cross-reactivity drive functionally diverse anti-*Aspergillus fumigatus* T cell responses in cystic fibrosis. *J Clin Invest* 133(5), e161593.

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.

Tappe B, Lauruschkat C, Strobel L, Kurzai O, Rebhan S, Kraus S, Lauruschkat C, Garcia JP, Bussemer L, Possler L, Held M, Huenniger K, Kniemeyer O, Schäuble S, Brakhage AA, Panagiotou G, White L, Einsele H, Löffler J, Wurster S (2022) COVID-19 patients share common, corticosteroid-independent features of impaired host immunity to pathogenic molds. *Front Immunol* 13, 954985.

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.

Lauruschkat CD, Etter S, Schnack E, Ebel F, Schäuble S, Page L, Rümens D, Dragan M, Schlegel N, Panagiotou G, Kniemeyer O, Brakhage AA, Einsele H, Wurster S, Loeffler J (2021) Chronic occupational mold exposure drives expansion of *Aspergillus*-reactive type 1 and type 2 T-helper cell responses. *J Fungi* 7(9), 698.

Lauruschkat CD, Page L, White PL, Etter S, Davies HE, Duckers J, Ebel F, Schnack E, Backx M, Dragan M, Schlegel N, Kniemeyer O, Brakhage AA, Einsele H, Loeffler J, Wurster S (2021) Development of a simple and robust whole blood assay with dual co-stimulation to quantify the release of T-cellular signature cytokines in response to *Aspergillus fumigatus* antigens. *J Fungi (Basel)* 7(6), 462.

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.

Macheleidt J, Kniemeyer O (2021) Serological proteome analysis for the characterization of secreted fungal protein antigens. In: *Methods Mol Biol* (ed.) Host-Fungal Interactions 2260, pp. 15-26. Springer, Heidelberg. ISBN: ISBN 978-1-0716.

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.

Page L, Wallstabe J, Lothar J, Bauser M, Kniemeyer O, Strobel L, Voltersen V, Teutschbein J, Hortschansky P, Morton CO, Brakhage AA, Topp M, Einsele H, Wurster S, Loeffler J (2021) CcpA- and Shm2-pulsed myeloid dendritic cells induce T-cell activation and enhance the neutrophilic oxidative burst response to *Aspergillus fumigatus*. *Front Immunol* 12, 659752.

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.

Strømland Ø, Kallio JP, Pschibul A, Skoge RH, Harðardóttir HM, Sverkeli LJ, Heinekamp T, Kniemeyer O, Migaud M, Makarov MV, Gossmann TI, Brakhage AA, Ziegler M (2021) Discovery of fungal surface NADases predominantly present in pathogenic species. *Nat Commun* 12(1), 1631.

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*.

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.

Schmidt S, Ebner F, Rosen K, Kniemeyer O, Brakhage AA, Löffler J, Seif M, Springer J, Schlosser J, Scharek-Tedin L, Scheffold A, Bacher P, Kühl AA, Rösler U, Hartmann S (2020) The domestic pig as human-relevant large animal model to study adaptive antifungal immune responses against airborne *Aspergillus fumigatus*. *Eur J Immunol* 50(11), 1712-1728.

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.

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.

Bacher P, Hohnstein T, Beerbaum E, Röcker M, Blango MG, Kaufmann S, Röhmel J, Eschenhagen P, Grehn C, Seidel K, Rickerts V, Lozza L, Stervbo U, Nienen M, Babel N, Milleck J, Assenmacher M, Cornely OA, Ziegler M, Wisplinghoff H, Heine G, Worm M, Siegmund B, Maul J, Creutz P, Tabeling C, Ruwwe-Glösenkamp C, Sander LE, Knosalla C, Brunke S, Hube B, Kniemeyer O, Brakhage AA, Schwarz C, Scheffold A (2019) Human anti-fungal Th17 immunity and pathology rely on cross-reactivity against *Candida albicans*. *Cell* 176(6), 1340-1355.

Blango MG, Kniemeyer O, Brakhage AA (2019) Conidial surface proteins at the interface of fungal infections. *PLOS Pathog* 15(9), e1007939. (Review)

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.

Murry R, Kniemeyer O, Krause K, Saiardi A, Kothe E (2019) Crosstalk between Ras and inositol phosphate signaling revealed by lithium action on inositol monophosphatase in *Schizophyllum commune*. *Adv Biol Regul* 72, 78-88.

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.

Bajerski F, Stock J, Hanf B, Darienko T, Heine-Dobbernack E, Lorenz M, Naujox L, Keller ERJ, Schumacher HM, Friedl T, Eberth S, Mock HP, Kniemeyer O, Overmann J (2018) ATP content and cell viability as indicators for cryostress across the diversity of life. *Front Physiol* 9, 921.

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.

- Vermeulen E, Carpentier S, Kniemeyer O, Sillen M, Maertens J, Lagrou K (2018) Proteomic differences between azole-susceptible and -resistant *Aspergillus fumigatus* strains. *Adv Microbiol* 8(1), 77-99.
- 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.
- Wirth S, Kunert M, Ahrens LM, Krause K, Broska S, Paetz C, Kniemeyer O, Jung EM, Boland W, Kothe E (2018) The regulator of G-protein signalling Thn1 links pheromone response to volatile production in *Schizophyllum commune*. *Environ Microbiol* 20(10), 3684-3699.
- Zukovskaja O, Kloss S, Blango MG, Ryabchykov O, Kniemeyer O, Brakhage AA, Bocklitz TW, Cialla-May D, Weber K, Popp J (2018) UV-Raman spectroscopic identification of fungal spores important for respiratory diseases. *Anal Chem* 90(15), 8912-8918.
- Amarsaikhan N, Albrecht-Eckardt D, Sasse C, Braus GH, Ogel ZB, Kniemeyer O (2017) Proteomic profiling of the antifungal drug response of *Aspergillus fumigatus* to voriconazole. *Int J Med Microbiol* 307(7), 398-408.
- 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.
- Seddigh P, Bracht T, Molinier-Frenkel V, Castellano F, Kniemeyer O, Schuster M, Weski J, Hasenberg A, Kraus A, Poschet G, Hager T, Theegarten D, Opitz CA, Brakhage AA, Sitek B, Hasenberg M, Gunzer M (2017) Quantitative Analysis of Proteome Modulations in Alveolar Epithelial Type II Cells in Response to Pulmonary *Aspergillus fumigatus* Infection. *Mol Cell Proteomics* 16(12), 2184-2198.
- Shekhova E, Kniemeyer O, Brakhage AA (2017) Induction of Mitochondrial Reactive Oxygen Species Production by Itraconazole, Terbinafine, and Amphotericin B as a Mode of Action against *Aspergillus fumigatus*. *Antimicrob Agents Chemother* 61(11), e00978-17.
- 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.
- Bacher P, Heinrich F, Stervbo U, Nienen M, Vahldieck M, Iwert C, Vogt K, Kollet J, Babel N, Sawitzki B, Schwarz C, Bereswill S, Heimesaat MM, Heine G, Gadermaier G, Asam C, Assenmacher M, Kniemeyer O, Brakhage AA, Ferreira F, Wallner M, Worm M, Scheffold A (2016) Regulatory T cell specificity directs tolerance versus allergy against aeroantigens in Humans. *Cell* 167(4), 1067-1078.e16.
- Freihorst D, Brunsch M, Wirth S, Krause K, Kniemeyer O, Linde J, Kunert M, Boland W, Kothe E

(2016) Smelling the difference: Transcriptome, proteome and volatilome changes after mating. *Fungal Genet Biol* 112, 2-11.

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)

Kröber A, Etzrodt S, Bach M, Monod M, Kniemeyer O, Staib P, Brakhage AA (2016) The transcriptional regulators SteA and StuA contribute to keratin degradation and sexual reproduction of the dermatophyte *Arthroderma benhamiae*. *Curr Genet* 63(1), 103-116.

Kröber A, Scherlach K, Hortschansky P, Shelest E, Staib P, Kniemeyer O, Brakhage AA (2016) HapX Mediates Iron Homeostasis in the Pathogenic Dermatophyte *Arthroderma benhamiae* but Is Dispensable for Virulence. *PLOS ONE* 11(3), e0150701.

Kroll K, Shekhova E, Mattern DJ, Thywissen A, Jacobsen ID, Strassburger M, Heinekamp T, Shelest E, Brakhage AA, Kniemeyer O (2016) The hypoxia-induced dehydrogenase HorA is required for coenzyme Q10 biosynthesis, azole sensitivity and virulence of *Aspergillus fumigatus* *Mol Microbiol* 101(1), 92-108.

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.

Teutschbein J, Simon S, Lothar J, Springer J, Hortschansky P, Morton CO, Löffler J, Einsele H, Conneally E, Rogers TR, Guthke R, Brakhage AA, Kniemeyer O (2016) Proteomic profiling of serological responses to *Aspergillus fumigatus* antigens in patients with invasive aspergillosis. *J Proteome Res* 15(5), 1580-1591.

Vaknin Y, Hillmann F, Iannitti R, Ben Baruch N, Sandovsky-Losica H, Shadkchan Y, Romani L, Brakhage A, Kniemeyer O, Osherov N (2016) Identification and characterization of a novel *Aspergillus fumigatus* rhomboid family putative protease RbdA involved in hypoxia sensing and virulence. *Infect Immun* 84(6), 1866-1878.

Altwasser R, Baldin C, Weber J, Guthke R, Kniemeyer O, Brakhage AA, Linde J, Valiante V (2015) Network Modeling Reveals Cross Talk of MAP Kinases during Adaptation to Caspofungin Stress in *Aspergillus fumigatus*. *PLOS One* 10(9), e0136932.

Bacher P, Jochheim-Richter A, Mockel-Tenbrink N, Kniemeyer O, Wingefeld E, Alex R, Ortigao A, Karpova D, Lehrnbecher T, Ullmann AJ, Hamprecht A, Cornely O, Brakhage AA, Assenmacher M, Bonig H, Scheffold A (2015) Clinical-scale isolation of the total *Aspergillus fumigatus*-reactive T-helper cell repertoire for adoptive transfer. *Cytotherapy* 17(10), 1396-1405.

Bacher P, Steinbach A, Kniemeyer O, Hamprecht A, Assenmacher M, Vehreschild MJ, Vehreschild JJ, Brakhage AA, Cornely OA, Scheffold A (2015) Fungus-specific CD4(+) T cells for

rapid identification of invasive pulmonary mold infection. *Am J Respir Crit Care Med* 191(3), 348-352.

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)

Hillmann F, Shekhova E, Kniemeyer O (2015) Insights into the cellular responses to hypoxia in filamentous fungi. *Curr Genet* 61(3), 441-455.

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)

Rauscher S, Pacher S, Hedtke M, Kniemeyer O, Fischer R (2015) A phosphorylation code of the *Aspergillus nidulans* global regulator VelvetA (VeA) determines specific functions. *Mol Microbiol* 99(5), 909-924.

Valiante V, Monteiro MC, Martín J, Altwasser R, El Aouad N, González I, Kniemeyer O, Mellado E, Palomo S, de Pedro N, Pérez-Victoria I, Tormo JR, Vicente F, Reyes F, Genilloud O, Brakhage AA (2015) Hitting the caspofungin salvage pathway of human-pathogenic fungi with the novel lasso peptide humidimycin (MDN-0010). *Antimicrob Agents Chemother* 59(9), 5145-5153.

Wagner K, Krause K, David A, Kai M, Jung EM, Sammer D, Kniemeyer O, Boland W, Kothe E (2015) Influence of zygomycete-derived D'orenone on IAA signaling in Tricholoma-spruce ectomycorrhiza. *Environ Microbiol* 18(8), 2470-2480.

Wagner K, Linde J, Krause K, Gube M, Koestler T, Sammer D, Kniemeyer O, Kothe E (2015) Tricholoma vaccinum host communication during ectomycorrhiza formation. *FEMS Microbiol Ecol* 91(11),

Bacher P, Kniemeyer O, Schönbrunn A, Sawitzki B, Assenmacher M, Rietschel E, Steinbach A, Cornely OA, Brakhage AA, Thiel A, Scheffold A (2014) Antigen-specific expansion of human regulatory T cells as a major tolerance mechanism against mucosal fungi. *Mucosal Immunol* 7(4), 916-928.

Bacher P, Kniemeyer O, Teutschbein T, Thoen M, Vödisch M, Wartenberg D, Scharf DH, Koester-Eiserfunke N, Schütte M, Dübel S, Assenmacher M, Brakhage AA, Scheffold A (2014) Identification of immunogenic antigens from *Aspergillus fumigatus* by direct multi-parameter characterization of specific conventional and regulatory CD4⁺ T cells. *Journal of Immunology* 197(7), 3332-3343.

Bayry J, Beaussart A, Dufrêne YF, Sharma M, Bansal K, Kniemeyer O, Aimaniananda V, Brakhage AA, Kaveri SV, Kwon-Chung KJ, Latgé JP, Beauvais A (2014) Surface structure characterization of *Aspergillus fumigatus* conidia mutated in the melanin synthesis pathway and their human cellular immune response. *Infect Immun* 82(8), 3141-3153.

Hillmann F, Linde J, Beckmann N, Cyrulies M, Strassburger M, Heinekamp T, Haas H, Guthke R,

Kniemeyer O, Brakhage AA (2014) The novel globin protein fungoglobulin is involved in low oxygen adaptation of *Aspergillus fumigatus*. *Mol Microbiol* 93(3), 539-553.

Kroll K, Pätz V, Hillmann F, Vaknin Y, Schmidt-Heck W, Roth M, Jacobsen ID, Osherov N, Brakhage AA, Kniemeyer O (2014) Identification of hypoxia-inducible target genes of *Aspergillus fumigatus* by transcriptome analysis reveals cellular respiration as important contributor to hypoxic survival. *Eukaryot Cell* 13(9), 1241-1253.

Lapp K, Vödisch M, Kroll K, Strassburger M, Kniemeyer O, Heinekamp T, Brakhage AA (2014) Characterisation of the *Aspergillus fumigatus* detoxification systems for reactive nitrogen intermediates and impact on virulence. *Frontiers in Microbiology* 5, 469.

Stubendorff B, Finke S, Walter M, Kniemeyer O, von Eggeling F, Gruschwitz T, Steiner T, Ott U, Wolf G, Wunderlich H, Junker K (2014) Urine protein profiling identified alpha-1-microglobulin and haptoglobin as biomarkers for early diagnosis of acute allograft rejection following kidney transplantation. *World J Urol* 32(6), 1619-1624.

Beauvais A, Bozza S, Kniemeyer O, Formosa C, Formosa C, Balloy V, Henry C, Roberson RW, Dague E, Chignard M, Brakhage AA, Romani L, Latgé JP (2013) Deletion of the α -(1,3)-glucan synthase genes induces a restructuring of the conidial cell wall responsible for the avirulence of *Aspergillus fumigatus*. *PLOS Pathog* 9(11), e1003716.

Muszkieto L, Beauvais A, Pätz V, Gibbons JG, Anton Leberre V, Beau R, Shibuya K, Rokas A, Francois JM, Kniemeyer O, Brakhage AA, Latgé JP (2013) Investigation of *Aspergillus fumigatus* biofilm formation by various. *Front Microbiol* 4, 13.

Shopova I, Bruns S, Thywissen A, Kniemeyer O, Brakhage AA, Hillmann F (2013) Extrinsic extracellular DNA leads to biofilm formation and colocalizes with matrix polysaccharides in the human pathogenic fungus *Aspergillus fumigatus*. *Front Microbiol* 4, 141.

Barker BM, Kroll K, Vödisch M, Mazurie A, Kniemeyer O, Cramer RA (2012) Transcriptomic and proteomic analyses of the *Aspergillus fumigatus* hypoxia response using an oxygen-controlled fermenter. *BMC Genomics* 13, 62-62.

Heddergott C, Bruns S, Nietzsche S, Leonhardt I, Kurzai O, Kniemeyer O, Brakhage AA (2012) The *Arthroderma benhamiae* hydrophobin HypA mediates hydrophobicity and influences recognition by human immune effector cells. *Eukaryot Cell* 11(5), 673-682.

Horn F, Heinekamp T, Kniemeyer O, Pollmächer J, Valiante V, Brakhage AA (2012) Systems biology of fungal infection. *Front Microbiol* 3, 108.

Müller S, Baldin C, Groth M, Guthke R, Kniemeyer O, Brakhage AA, Valiante V (2012) Comparison of transcriptome technologies in the pathogenic fungus *Aspergillus fumigatus* reveals novel insights into the genome and MpkA dependent gene expression. *BMC Genomics* 13, 519.

Wartenberg D, Vödisch M, Kniemeyer O, Albrecht-Eckardt D, Scherlach K, Winkler R, Weide M, Brakhage AA (2012) Proteome analysis of the farnesol-induced stress response in *Aspergillus nidulans* - The role of a putative dehydrin. *J Proteomics* 75(13), 4038-4049.

Albrecht D, Kniemeyer O, Mech F, Gunzer M, Brakhage A, Guthke R (2011) On the way toward systems biology of *Aspergillus fumigatus* infection. *Int J Med Microbiol* 301(5), 453-459.

Burmester A, Shelest E, Glöckner G, Heddergott C, Schindler S, Staib P, Heidel A, Felder M, Petzold A, Szafranski K, Feuermann M, Pedruzzi I, Priebe S, Groth M, Winkler R, Li W, Kniemeyer O, Schroeckh V, Hertweck C, Hube B, White TC, Platzer M, Guthke R, Heitman J, Wöstemeyer J, Zipfel PF, Monod M, Brakhage AA (2011) Comparative and functional genomics provide insights into the pathogenicity of dermatophytic fungi. *Genome Biol* 12(1), R7.

Kniemeyer O (2011) Proteomics of eukaryotic microorganisms: The medically and biotechnologically important fungal genus *Aspergillus*. *Proteomics* 11(15), 3232-3243.

Kniemeyer O, Schmidt AD, Vödisch M, Wartenberg D, Brakhage AA (2011) Identification of virulence determinants of the human pathogenic fungi *Aspergillus fumigatus* and *Candida albicans* by proteomics. *Int J Med Microbiol* 301(5), 368-377.

Vödisch M, Scherlach K, Winkler R, Hertweck C, Braun HP, Roth M, Haas H, Werner ER, Brakhage AA, Kniemeyer O (2011) Analysis of the *Aspergillus fumigatus* proteome reveals metabolic changes and the activation of the pseurotin A biosynthesis gene cluster in response to hypoxia. *J Proteome Res* 10(5), 2508-2524.

Wartenberg D, Lapp K, Jacobsen ID, Dahse HM, Kniemeyer O, Heinekamp T, Brakhage AA (2011) Secretome analysis of *Aspergillus fumigatus* reveals Asp-hemolysin as a major secreted protein. *Int J Med Microbiol* 301(7), 602-611.

Albrecht D, Guthke R, Brakhage AA, Kniemeyer O (2010) Integrative analysis of the heat shock response in *Aspergillus fumigatus*. *BMC Genomics* 11, 32.

Albrecht D, Kniemeyer O, Brakhage AA, Guthke R (2010) Missing values in gel-based proteomics. *Proteomics* 10(6), 1202-1211.

Bruns S, Kniemeyer O, Hasenberg M, Aimaganianda V, Nietzsche S, Thywissen A, Jeron A, Latgé JP, Brakhage AA, Gunzer M (2010) Production of extracellular traps against *Aspergillus fumigatus* *in vitro* and in infected lung tissue is dependent on invading neutrophils and influenced by hydrophobin RodA. *PLOS Pathog* 6(4), e1000873.

Bruns S, Seidler M, Albrecht D, Salvenmoser S, Remme N, Hertweck C, Brakhage AA, Kniemeyer O, Müller FM (2010) Functional genomic profiling of *Aspergillus fumigatus* biofilm reveals enhanced production of the mycotoxin gliotoxin. *Proteomics* 10(17), 3097-3107.

Mouyna I, Kniemeyer O, Jank T, Loussert C, Mellado E, Aimaganianda V, Beauvais A, Wartenberg D, Sarfati J, Bayry J, Prévost MC, Brakhage AA, Strahl S, Huerre M, Latgé JP (2010) Members of protein O-mannosyltransferase family in *Aspergillus fumigatus* differentially affect growth, morphogenesis and viability. *Mol Microbiol* 76(5), 1205-1221.

Teutschbein J, Albrecht D, Pötsch M, Guthke R, Aimaganianda V, Clavaud C, Latgé JP, Brakhage AA, Kniemeyer O (2010) Proteome profiling and functional classification of intracellular proteins from conidia of the human-pathogenic mold *Aspergillus fumigatus*. *J Proteome Res* 9(7), 3427-3442.

Aimaganianda V, Bayry J, Bozza S, Kniemeyer O, Perruccio K, Elluru SR, Clavaud C, Paris S, Brakhage AA, Kaveri SV, Romani L, Latgé JP (2009) Surface hydrophobin prevents immune recognition of airborne fungal spores. *Nature* 460(7259), 1117-1121.

Kniemeyer O, Lessing F, Brakhage AA (2009) Proteome analysis for pathogenicity and new

diagnostic markers for *Aspergillus fumigatus*. *Med Mycol* 47 Suppl 1, S248-S254.

Schmalzer-Ripcke J, Sugareva V, Gebhardt P, Winkler R, Kniemeyer O, Heinekamp T, Brakhage AA (2009) Production of pyomelanin, a second type of melanin, via the tyrosine degradation pathway in *Aspergillus fumigatus*. *Appl Environ Microbiol* 75(2), 493-503.

Vödisch M, Albrecht D, Lessing F, Schmidt AD, Winkler R, Guthke R, Brakhage AA, Kniemeyer O (2009) Two-dimensional proteome reference maps for the human pathogenic filamentous fungus *Aspergillus fumigatus*. *Proteomics* 9(5), 1407-1415.

Grosse C, Heinekamp T, Kniemeyer O, Gehrke A, Brakhage AA (2008) Protein kinase A regulates growth, sporulation, and pigment formation in *Aspergillus fumigatus*. *Appl Environ Microbiol* 74(15), 4923-4933.

Guthke R, Kniemeyer O, Albrecht D, Brakhage AA, Moeller U (2007) Discovery of gene regulatory networks in *Aspergillus fumigatus*. *Lect Notes Bioinf* 4366,

Hortschansky P, Eisendle M, Al-Abdallah Q, Schmidt AD, Bergmann S, Thön M, Kniemeyer O, Abt B, Seeber B, Werner ER, Kato M, Brakhage AA, Haas H (2007) Interaction of HapX with the CCAAT-binding complex--a novel mechanism of gene regulation by iron. *EMBO J* 26(13), 3157-3168.

Lessing F, Kniemeyer O, Wozniok I, Loeffler J, Kurzai O, Haertl A, Brakhage AA (2007) The *Aspergillus fumigatus* transcriptional regulator AfYap1 represents the major regulator for defense against reactive oxygen intermediates but is dispensable for pathogenicity in an intranasal mouse infection model. *Eukaryot Cell* 6(12), 2290-2302.

Kniemeyer O, Lessing F, Scheibner O, Hertweck C, Brakhage AA (2006) Optimisation of a 2-D gel electrophoresis protocol for the human-pathogenic fungus *Aspergillus fumigatus*. *Curr Genet* 49(3), 178-189.

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