

Publications

Jojić K*, Gherlone F*, Cseresnyés Z, Bissell AU, Hoefgen S, Hoffmann S, Huang Y, Janevska S, Figge MT, Valiante V (2024) The spatial organization of sphingofungin biosynthesis in *Aspergillus fumigatus* and its cross-interaction with sphingolipid metabolism. *mBio* 15(3), e0019524.

Valiante V (2023) Advances in synthetic biology of fungi and contributions to the discovery of new molecules. *ChemBioChem* 24(11), e202300008. (Review)

Bissell AU, Rautschek J, Hoefgen S, Raguž L, Mattern DJ, Saeed N, Janevska S, Jojić K, Huang Y, Kufs JE, Herboeck B, Guo H, Hillmann F, Beemelmans C, Valiante V (2022) Biosynthesis of the sphingolipid inhibitors sphingofungins in filamentous fungi requires aminomalonnate as a metabolic precursor. *ACS Chem Biol* 17(2), 386-394.

Günther M*, Reimer C*, Herbst R*, Kufs JE, Rautschek J, Ueberschaar N, Zhang S, Peschel G, Reimer L, Regestein L, Valiante V, Hillmann F#, Stallforth P# (2022) Yellow polyketide pigment suppresses premature hatching in social amoeba. *Proc Natl Acad Sci U S A* 119(43), e2116122119.

Hoefgen S, Bissell AU, Huang Y, Gherlone F, Raguž L, Beemelmans C, Valiante V (2022) Desaturation of the sphingofungin polyketide tail results in increased serine palmitoyltransferase inhibition. *Microbiol Spectr* 10(5), e0133122.

Huang Y, Valiante V (2022) Chemical diversity and biosynthesis of drimane-type sesquiterpenes in the fungal kingdom. *ChemBioChem* 23(17), e202200173. (Review)

Huang Y*, Hoefgen S*, Gherlone F, Valiante V (2022) Intrinsic ability of the β -oxidation pathway to produce bioactive styrylpyrones. *Angew Chem Int Ed* 61(34), e202206851.

Kufs JE, Reimer C, Steyer E, Valiante V, Hillmann F, Regestein L (2022) Scale-up of an amoeba-based process for the production of the cannabinoid precursor olivetolic acid. *Microb Cell Fact* 21(1), 217.

Maehler D, Hoefgen S, Münchberg U, Schmitz OJ, Rautschek J, Huang Y, Freier E, Valiante V (2022) Time-resolved multiparameter analytics on a cell-free production platform for acyl-CoA precursors. *Anal Sci Adv* 3, 289-296.

Reimer C*, Kufs JE*, Rautschek J, Regestein L, Valiante V#, Hillmann F# (2022) Engineering the amoeba *Dictyostelium discoideum* for biosynthesis of a cannabinoid precursor and other polyketides. *Nat Biotechnol* 40(5), 751-758.

Huang Y, Höfgen S, Valiante V (2021) Biosynthesis of fungal drimane-type sesquiterpene esters. *Angew Chem Int Ed* 60(44), 23763-23770.

Rocha MC, Fabri JHTM, da Silva LP, Angolini CFF, Bertolini MC, da Cunha AF, Valiante V, Goldman GH, Fill TP, Malavazi I (2021) Transcriptional control of the production of *Aspergillus fumigatus* conidia-borne secondary metabolite fumiquinazoline C important for phagocytosis protection. *Genetics* 218(1), iyab036.

Furukawa T, Scheven MT, Misslinger M, Zhao C, Hoefgen S, Gsaller F, Lau J, Jöchl C, Donaldson I, Valiante V, Brakhage AA, Bromley MJ, Haas H, Hortschansky P (2020) The fungal

CCAAT-binding complex and HapX display highly variable but evolutionary conserved synergetic promoter-specific DNA recognition. *Nucleic Acids Res* 48(7), 3567-3590.

Janevska S, Ferling I, Jojić K, Rautschek J, Hoefgen S, Proctor RH, Hillmann F, Valiante V (2020) Self-protection against the sphingolipid biosynthesis inhibitor fumonisin B1 is conferred by a *FUM* cluster-encoded ceramide synthase. *mBio* 11(3), e00455-20.

Köhler T, Heida T, Hoefgen S, Weigel N, Valiante V, Thiele J (2020) Cell-free protein synthesis and *in situ* immobilization of deGFP-MatB in polymer microgels for malonate-to-malonyl CoA conversion. *RSC Adv* 10, 40588-40596.

Krishnan BP, Prieto-Lopez LO, Hoefgen S, Xue L, Wang S, Valiante V, Cui J (2020) A thermo-magneto-responsive smart biocatalyst for malonyl Coenzyme A synthesis. *ACS Appl Mater Interfaces* 12(18), 20982-20990.

Kufs JE, Hoefgen S, Rautschek J, Bissell AU, Graf C, Fiedler J, Braga D, Regestein L, Rosenbaum MA, Thiele J, Valiante V (2020) Rational design of flavonoid production routes using combinatorial and precursor-directed biosynthesis. *ACS Synth Biol* 9(7), 1823-1832.

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.

Manfiolli AO, Siqueira FS, Dos Reis TF, Van Dijck P, Schrevens S, Hoefgen S, Föge M, Straßburger M, de Assis LJ, Heinekamp T, Rocha MC, Janevska S, Brakhage AA, Malavazi I, Goldman GH, Valiante V (2019) Mitogen-activated protein kinase cross-talk interaction modulates the production of melanins in *Aspergillus fumigatus*. *mBio* 10(2), e00215-19.

Conrad T*, Kniemeyer O, Henkel SG, Krüger T, Mattern DJ, Valiante V, Guthke R, Jacobsen ID, Brakhage AA, Vlais 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.

Fischer J, Müller SY, Netzker T, Jäger N, Gacek-Matthews A, Scherlach K, Stroe MC, García-Altare M, Pezzini F, Schoeler H, Reichelt M, Gershenzon, Krespach MK, Shelest E, Schroeckh V, Valiante V, Heinzl T, Hertweck C, Strauss J, Brakhage AA (2018) Chromatin mapping identifies BasR, a key regulator of bacteria-triggered production of fungal secondary metabolites. *eLife* 7, e40969.

Hoefgen S, Lin J, Fricke J, Stroe MC, Mattern DJ, Kufs JE, Hortschansky P, Brakhage AA, Hoffmeister D, Valiante V (2018) Facile assembly and fluorescence-based screening method for heterologous expression of biosynthetic pathways in fungi. *Metab Eng* 48, 44-51.

Manfiolli AO, de Castro PA, Dos Reis TF, Dolan S, Doyle S, Jones G, Riaño Pachón DM, Ulaş M, Noble LM, Mattern DJ, Brakhage AA, Valiante V, Silva-Rocha R, Bayram O, Goldman GH (2017) *Aspergillus fumigatus* protein phosphatase PpzA is involved in iron assimilation, secondary metabolite production, and virulence. *Cell Microbiol* 19(12),

Mattern DJ, Valiante V, Horn F, Petzke L, Brakhage AA (2017) Rewiring of the Austinoid Biosynthetic Pathway in Filamentous Fungi. *ACS Chem Biol* 12(12), 2927-2933.

Valiante V (2017) The Cell Wall Integrity Signaling Pathway and Its Involvement in Secondary

Metabolite Production. *J Fungi* 3(4), 68. (Review)

Valiante V, Mattern DJ, Schüffler A, Horn F, Walther G, Scherlach K, Petzke L, Dickhaut J, Guthke R, Hertweck C, Nett M, Thines E, Brakhage AA (2017) Discovery of an Extended Austinoid Biosynthetic Pathway in *Aspergillus calidoustus*. *ACS Chem Biol* 12(5), 1227-1234.

Weber J, Valiante V, Nødvig CS, Mattern DJ, Slotkowski RA, Mortensen UH, Brakhage AA (2017) Functional Reconstitution of a Fungal Natural Product Gene Cluster by Advanced Genome Editing. *ACS Synth Biol* 6(1), 62-68.

Bruder Nascimento AC, Dos Reis TF, de Castro PA, Hori JI, Bom VL, de Assis LJ, Ramalho LN, Rocha MC, Malavazi I, Brown NA, Valiante V, Brakhage AA, Hagiwara D, Goldman GH (2016) Mitogen activated protein kinases SakA (HOG1) and MpkC collaborate for *Aspergillus fumigatus* virulence. *Mol Microbiol* 100(5), 841-859.

Horn F, Linde J, Mattern DJ, Walther G, Guthke R, Scherlach K, Martin K, Brakhage AA, Petzke L, Valiante V (2016) Draft genome sequences of fungus *Aspergillus calidoustus*. *Genome Announc* 4(2), e00102-16.

Macheleidt J, Mattern DJ, Fischer J, Netzker T, Weber J, Schroeckh V, Valiante V, Brakhage AA (2016) Regulation and Role of Fungal Secondary Metabolites. *Annu Rev Genet* 50, 371-392. (Review)

Valiante V, Baldin C, Hortschansky P, Jain R, Thywißen A, Straßburger M, Shelest E, Heinekamp T, Brakhage AA (2016) The *Aspergillus fumigatus* conidial melanin production is regulated by the bifunctional bHLH DevR and MADS-box RlmA transcription factors. *Mol Microbiol* 102(2), 321-335.

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.

Baldin C, Valiante V, Krüger T, Schafferer 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.

Horn F, Linde J, Mattern DJ, Walther G, Guthke R, Brakhage AA, Valiante V (2015) Draft Genome Sequence of the Fungus *Penicillium brasilianum* MG11. *Genome Announc* 3(5), e00724-15.

Mattern DJ, Schoeler H, Weber J, Novohradská S, Kraibooj K, Dahse HM, Hillmann F, Valiante V, Figge MT, Brakhage AA (2015) Identification of the antiphagocytic trypanidin gene cluster in the human-pathogenic fungus *Aspergillus fumigatus*. *Applied Microbiology and Biotechnology* 99(23), 10151-10161.

Mattern DJ, Valiante V, Unkles SE, Brakhage AA (2015) Synthetic biology of fungal natural products. *Front Microbiol* 6, 775. (Review)

Valiante V, Macheleidt J, Föge M, Brakhage AA (2015) The *Aspergillus fumigatus* cell wall integrity signaling pathway: drug target, compensatory pathways, and virulence. *Front Microbiol* 6, 325. (Review)

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.

Heinekamp T, Valiante V, Koester-Eiserfunke N, Brakhage AA (2014) Functional genomics to characterize opportunistic pathogens. In: Nowrousian M (ed.) *The Mycota* 13, pp. 321-347. Springer. ISBN: 9783642452178.

Horn F, Valiante V, Guthke R, Brakhage AA (2014) Data-driven systems biology of fungal infections. In: Sullivan D, Moran GP (eds.) *Human pathogenic Fungi: Molecular biology and pathogenic mechanisms* Caister Academic Press, Norfolk, UK. ISBN: 978-1-908230-44.

Schwartz VU, Winter S, Shelest E, Marcet-Houben M, Horn F, Wehner S, Linde J, Valiante V, Sammeth M, Riege K, Nowrousian M, Kaerger K, Jacobsen ID, Marz M, Brakhage AA, Gabaldón T, Böcker S, Voigt K (2014) Gene expansion shapes genome architecture in the human pathogen *Lichtheimia corymbifera*: an evolutionary genomics analysis in the ancient terrestrial Mucorales (Mucoromycotina). *PLOS Genetics* 10(8), e1004496.

Unkles SE*, Valiante V*, Mattern DJ, Brakhage AA (2014) Synthetic biology tools for bioprospecting of natural products in eukaryotes. *Chem Biol* 21(4), 502-508.

Heinekamp T, Thywißen A, Macheleidt J, Keller S, Valiante V, Brakhage AA (2012) *Aspergillus fumigatus* melanins: interference with the host endocytosis pathway and impact on virulence. *Front Microbiol* 3, 440.

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.

Jain R, Valiante V, Remme N, Docimo T, Heinekamp T, Hertweck C, Gershenzon J, Haas H, Brakhage AA (2011) The MAP kinase MpkA controls cell wall integrity, oxidative stress response, gliotoxin production and iron adaptation in *Aspergillus fumigatus*. *Mol Microbiol* 82(1), 39-53.

Rispail N, Soanes DM, Ant C, Czajkowski R, Grünler A, Huguet R, Perez-Nadales E, Poli A, Sartorel E, Valiante V, Yang M, Beffa R, Brakhage AA, Gow NA, Kahmann R, Lebrun MH, Lenasi H, Perez-Martin J, Talbot NJ, Wendland J, Di Pietro A (2009) Comparative genomics of MAP kinase and calcium-calcieneurin signalling components in plant and human pathogenic fungi. *Fungal Genet Biol* 46(4), 287-298.

Valiante V, Jain R, Heinekamp T, Brakhage AA (2009) The MpkA MAP kinase module regulates cell wall integrity signaling and pyomelanin formation in *Aspergillus fumigatus*. *Fungal Genet Biol* 46(12), 909-918.

Valiante V, Heinekamp T, Jain R, Härtl A, Brakhage AA (2008) The mitogen-activated protein kinase MpkA of *Aspergillus fumigatus* regulates cell wall signaling and oxidative stress response. *Fungal Genet Biol* 45(5), 618-627.

*equal contribution #corresponding author