

Prof. Dr. Axel A. Brakhage

Director Molecular and Applied Microbiology · Head of Department Transfer Group Anti-infectives · Acting head +49 3641 532-1001 axel.brakhage@leibniz-hki.de

Curriculum vitae

Main Research Areas

- Infection biology of human pathogenic fungi
- Molecular biotechnology / synthetic biotechnology of microbial compounds
- Microbial communication
- Eukaryotic gene regulation / transcription factors

Professional Career

since 2005	Scientific Director, Leibniz Institute for Natural Product Research and Infection Biology – Hans Knöll Institute (Leibniz-HKI) Jena
since 2005	Head of Department Molecular and Applied Microbiology, Leibniz-HKI Jena
since 2004	Professor (C4/W3) and chair in microbiology and molecular biology, Institute for Microbiology, Friedrich Schiller University Jena
2001-2004	Professor (C4) and chair in microbiology, Leibniz University Hanover
1998-2001	Professor (C3) in microbiology, Technical University Darmstadt
1996	Habilitation in microbiology, Ludwig-Maximilians-University Munich
1992-1998	Research assistant (C1), Institute for Genetics and Microbiology, Ludwig Maximilian University of Munich
1990-1992	Research assistant, The University of Sheffield, UK, funded through postdoc grants of the DFG
1989-1990	Group head, Biotechnology, BASF AG, Ludwigshafen
1989	Dr. rer. nat. in microbiology, „summa cum laude“ University Münster and Institut de Biologie Physico-Chimique (IBPC) Paris
1985	Studies in biology/chemistry, diploma in biology at the Westfälische Wilhelms-Universität Münster

Awards · Appointments · Scientific Activities

since 2020	Vice President of the DFG
since 2020	Head of section 13 "Microbiology and Immunology" and Senator in the German National Academy of Sciences Leopoldina
since 2020	Board of Directors, Leibniz Center for Photonics in Infection Research (LPI)
since 2020	Founding member and Board of Directors "Incate" Incubator for Antibacterial Therapies in Europe
since 2019	Member of the scientific panel of the Leibniz Institute of Virology (LIV), Hamburg
since 2019	Member of the foundation board of the Leibniz Institute for Immunotherapy (LIT), Regensburg
2019-2022	Spokesperson of the Excellence Cluster "Balance of the Microverse" (DFG)
since 2018	Member of the scientific panel of the Interdisciplinary Center for Clinical Research (IZKF), Münster

since 2017	Member of the Steering Committee DZIF/TTU Novel Antibiotics
since 2017	Elected member of the American Academy of Microbiology
since 2017	Member of the scientific panel of the Robert Koch Foundation (RKS), Berlin
since 2017	Member of the scientific panel of the MRC Medical Mycology Centre, Exeter, UK
since 2016	Member of the Clusterboard RIS3 Thüringen
since 2016	Member of the scientific panel of the Max Planck Institute for Infection Biology (MPIIB), Berlin
2016-2020	Spokesperson of the Leibniz Research Cluster “Biotechnologie 2020+“
since 2015	Elected member of the European Academy of Microbiology
since 2015	Honorary member of the Deutschsprachige Mykologische Gesellschaft e.V. (DMykG)
2014	Main Research Award of the German Society for Hygiene and Microbiology (DGHM)
since 2013	Spokesperson of the SFB/Transregio 124 FungiNet (DFG)
2013-2020	Deputy representative of the Leibniz-Research-Alliance Compounds and Biotechnology
since 2013	Board member of the research campus “InfectoGnostics” (BMBF)
since 2012	Spokesperson of the consortium “InfectControl 2020 – New Anti-infection Strategies – Science • Society • Economy” in the BMBF-programme “Zwanzig 20 – Partnership for Innovation”
2012-2016	Representative of the DFG-Professional Council 204 Microbiology, Immunology, Virology
2010-2012	Board member of the Integriertes Forschungs- und Behandlungszentrum *“Center for Sepsis Control and Care”* (CSCC) at the University Hospital Jena
2010-2018	Authorised commissioner of the Leibniz Association for Biotechnology
2010-2018	Member of the scientific panel of the Helmholtz-Centre for Infection Research (HZI), Braunschweig
2010-2018	Member of the scientific panel of the Institute for Pharmaceutical Research (HIPS), Saarbrücken
2010-2020	Member of the scientific panel of the Research Centre Borstel, Borstel
2010-2017	Member of the scientific panel of the Leibniz Institute of Plant Biochemistry (IPB), Halle
2009-2017	Supervisory Board Leibniz-Institute DSMZ – German Collection of Microorganisms and Cell Cultures, Braunschweig
2009-2016	Member of the scientific panel of the Research Center for Infectious Diseases (ZINF), Würzburg
2009-2011	President of the Vereinigung für Allgemeine und

	Angewandte Mikrobiologie (VAAM)
2008-2019	Member of the university council (reappointment 2011+2015) at the Friedrich Schiller University Jena
2008-2016	Member of the DFG-Professional Council 204 Microbiology, Immunology, Virology
2008	Appointed member of the Nationale Akademie der Wissenschaften, Leopoldina
2007-2016	Liaison Officer for scientific misconduct at the FSU Jena
2007-2020	Spokesperson of the excellence graduate school *„Jena School for Microbial Communication"* (JSMC)
2006-2008	Spokesperson of the graduate school *"International Leibniz Research School (ILRS) for microbial and biomolecular interactions"*
2006	Heinz-Seeliger award for infection biology
since 2005	Scientific panel *"Goettinger Center for Molecular Bio/Sciences"* (GZMB), Georg-August-University Göttingen
2005-2022	Member of the Faculty Council of the Faculty of Biological Sciences, Friedrich Schiller University Jena
2004-2010	Representative of the DFG Priority Programme 1160 "Colonisation and Infection by Human-pathogenic Fungi"
2003-2010	Scientific panel *„Center for Microbial Biotechnology"* DTU Copenhagen, Denmark
2003-2009	Member in the programme committee of the DFG Priority Programme 1152 *"Evolution of Metabolic Diversity"*
2003-2004	Dean, faculty biology, Leibniz-University Hanover
2002-2006, 2009-2020	Member of the scientific panel of the Interdisciplinary Center for Clinical Research (IZKF), Würzburg
since 1998	Editor of several magazines
since 1995	Principal investigator in EU projects

Topics

A. fumigatus pathobiology and novel therapeutic strategies

Functional microbiome research and molecular biotechnology

Eukaryotic Transcription Factors

Pathogenicity and biodiversity of Mucorales

Publications

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, Bougnoux ME, Kniemeyer O, d'Enfert C, Brakhage AA, Andes DR, Trümper V, Nehls C, Kasper L, Mogavero S, Gutsmann 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.

Details

Behrendt F, Pretzel D, Cseresnyés Z, Kleinsteuber M, Wloka T, Radosa L, Figge MT, Gottschaldt M, Brakhage AA, Schubert US[#] (2023) Hydrophilic cryogels as potential 3D cell culture materials: Synthesis and characterization of 2-(methacrylamido) glucopyranose-based polymer scaffolds. *J Polym Sci* 61(23), 3039-3054.

Details



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

Details



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

Details



Goldmann M[*], Schmidt F[*], Cseresnyés Z, Orasch T, Jahreis S, Hartung S, Figge MT, von Lilienfeld-Toal M, Heinekamp T, Brakhage AA[#] (2023) The lipid raft-associated protein stomatin is required for accumulation of dectin-1 in the phagosomal membrane and for full activity of macrophages against *Aspergillus fumigatus*. *mSphere* 8(1), e00523-22.

Details

González K*, Gangapurwala G*, Alex J*, Vollrath A, Cseresnyés Z, Weber C, Czaplewska JA, Hoeppener S, Svensson CM, Orasch T, Heinekamp T, Guerrero-Sánchez C, Figge MT, Schubert US, Brakhage AA (2023) Targeting of phagolysosomes containing conidia of the human pathogenic fungus *Aspergillus fumigatus* with polymeric particles. *Appl Microbiol Biotechnol* 107(2-3), 819-834.

Details

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.

Details

Kelani AA, Bruch A, Rivieccio 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.

Details



König S, Schroeder J, Nietzsche S, Heinekamp T, Brakhage AA, Zell R, Löffler B, Ehrhardt C (2023) The influenza A virus promotes fungal growth of *Aspergillus fumigatus* via direct interaction *in vitro*. *Microbes Infect* [Epub ahead of print]

Details



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.

Details



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Publication list as PDF

Teachings

Lecture Molekulare Biologie/Biotechnologie/Infektionsbiologie niederer Eukaryonten (MMB009) Prof. Dr. Axel A. Brakhage Details

Lecture Grundmodul „Mikrobiologie und Molekularbiologie" (MMB005) Prof. Dr. Axel A. Brakhage Details

Lecture Grundmodul „Mikrobielle Interaktionen" (MMB004) Prof. Dr. Axel A. Brakhage Details

Seminar Angewandte Mikrobiologie (MBGW1.4.1) Prof. Dr. Axel A. Brakhage Details

Seminar Grundmodul „Mikrobiologie und Molekularbiologie" (MMB005) Prof. Dr. Axel A.

Brakhage Details

Seminar Übung zum Verfassen eines Berichts (MMB009) Prof. Dr. Axel A. Brakhage Details

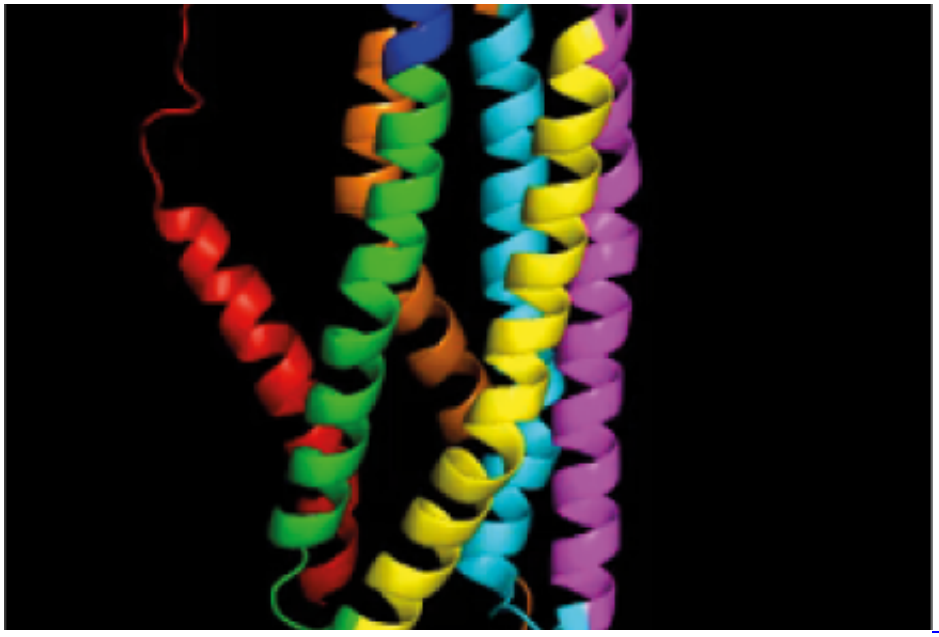
Practical course Angewandte Mikrobiologie (MBGW1.4.1) Prof. Dr. Axel A. Brakhage Details

Practical course Molekulare Biologie/Biotechnologie/Infektionsbiologie niederer Eukaryonten (MMB009) Prof. Dr. Axel A. Brakhage Details

Practical course Grundmodul „Mikrobiologie und Molekularbiologie" (MMB005) Prof. Dr. Axel A. Brakhage Details

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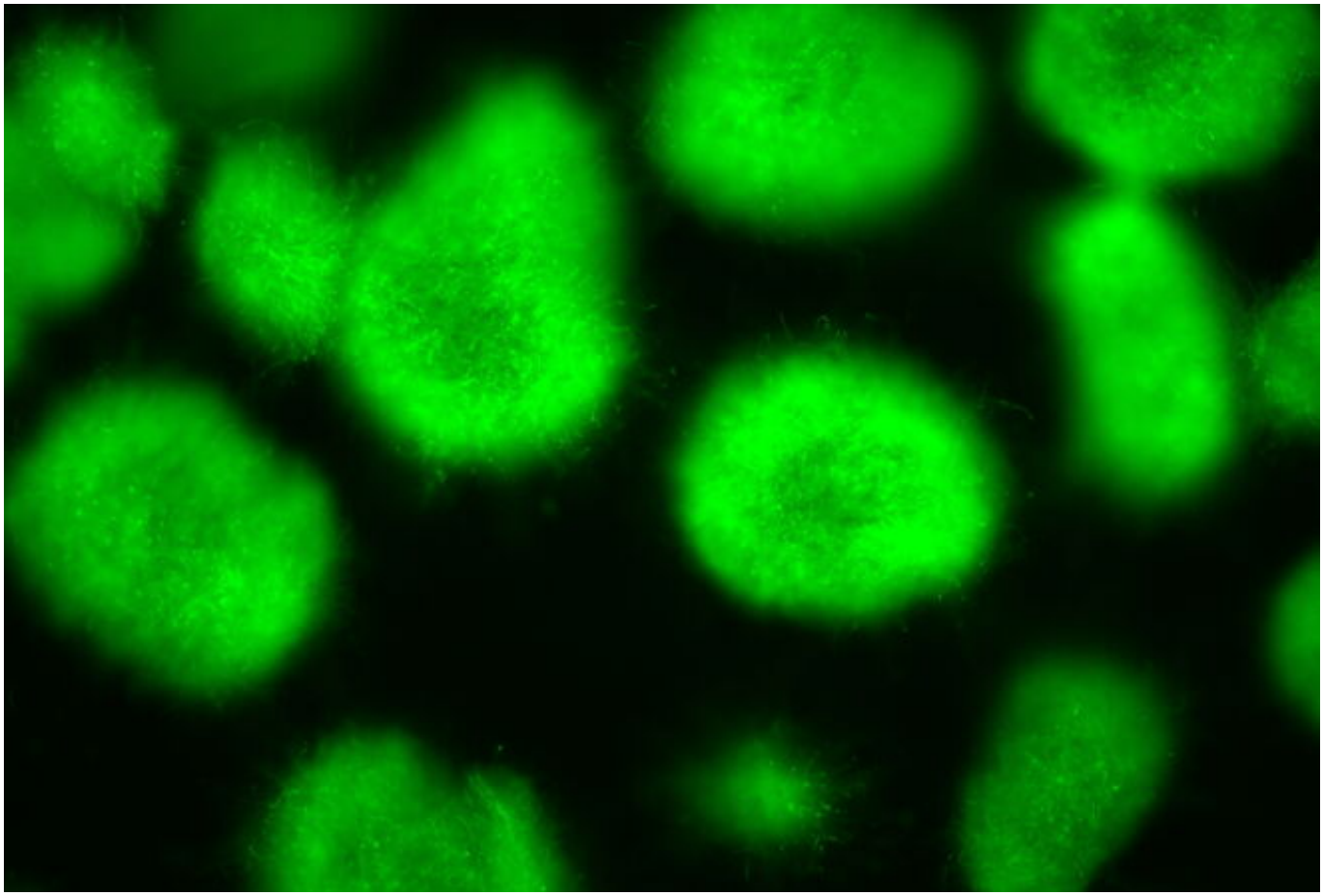
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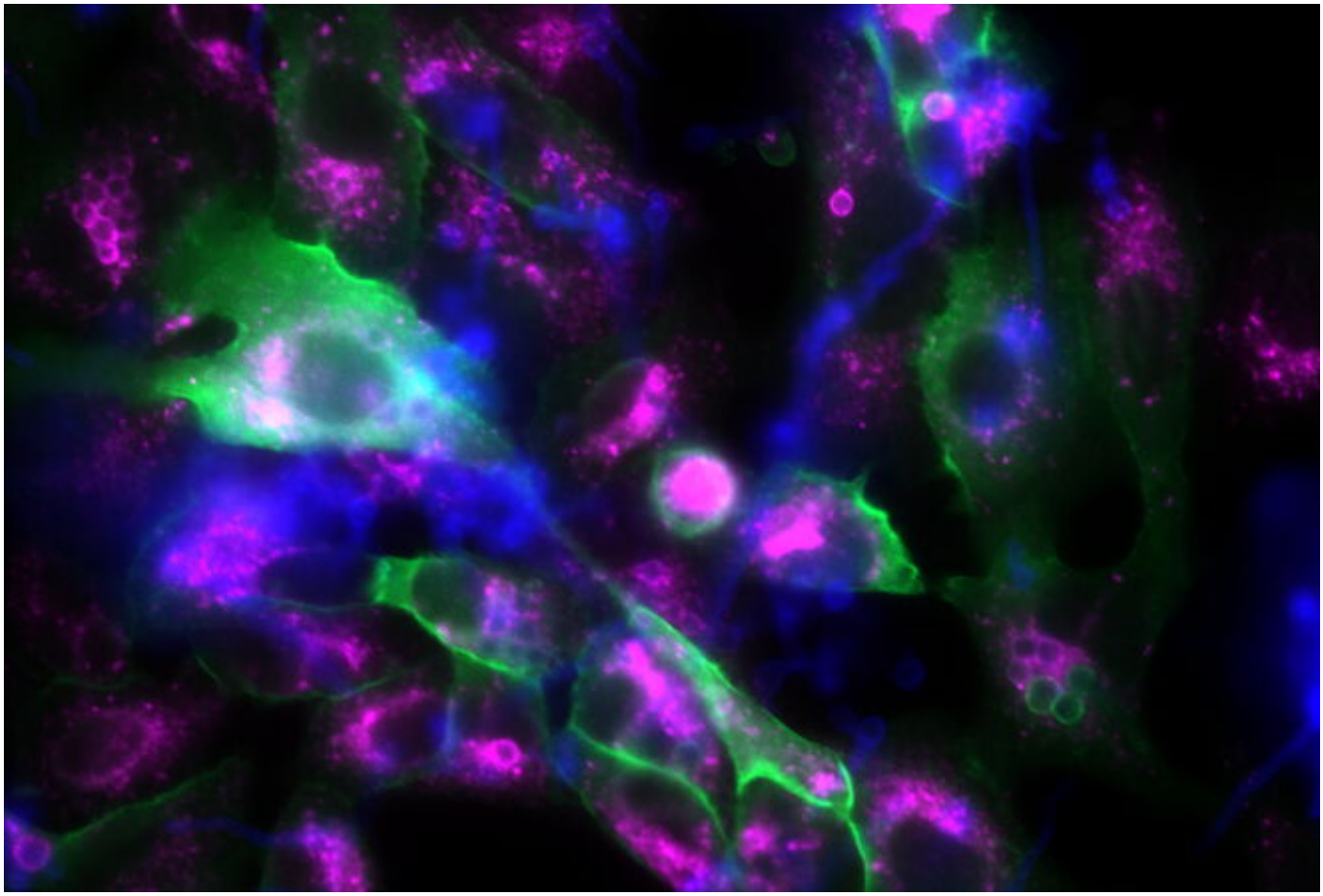
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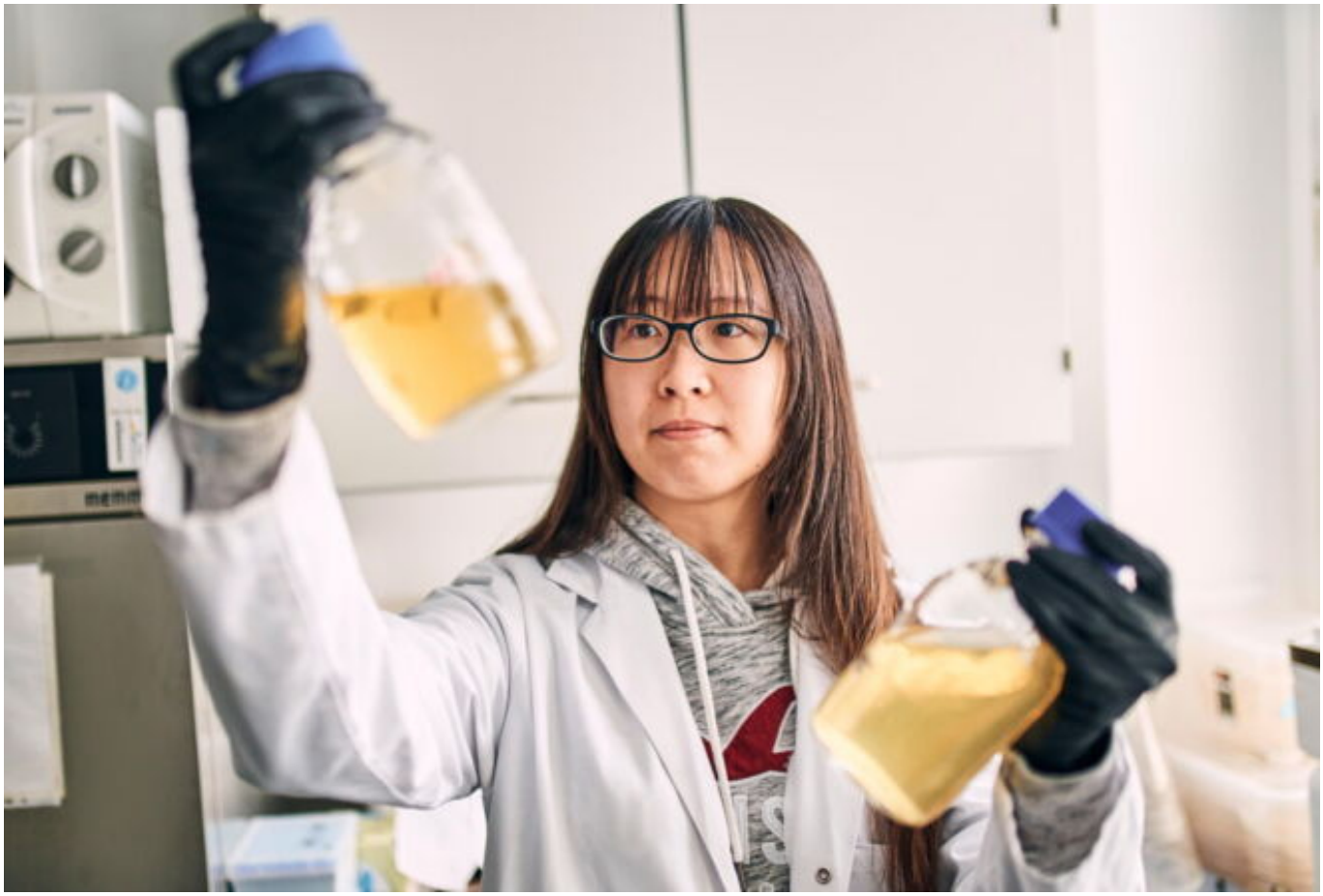
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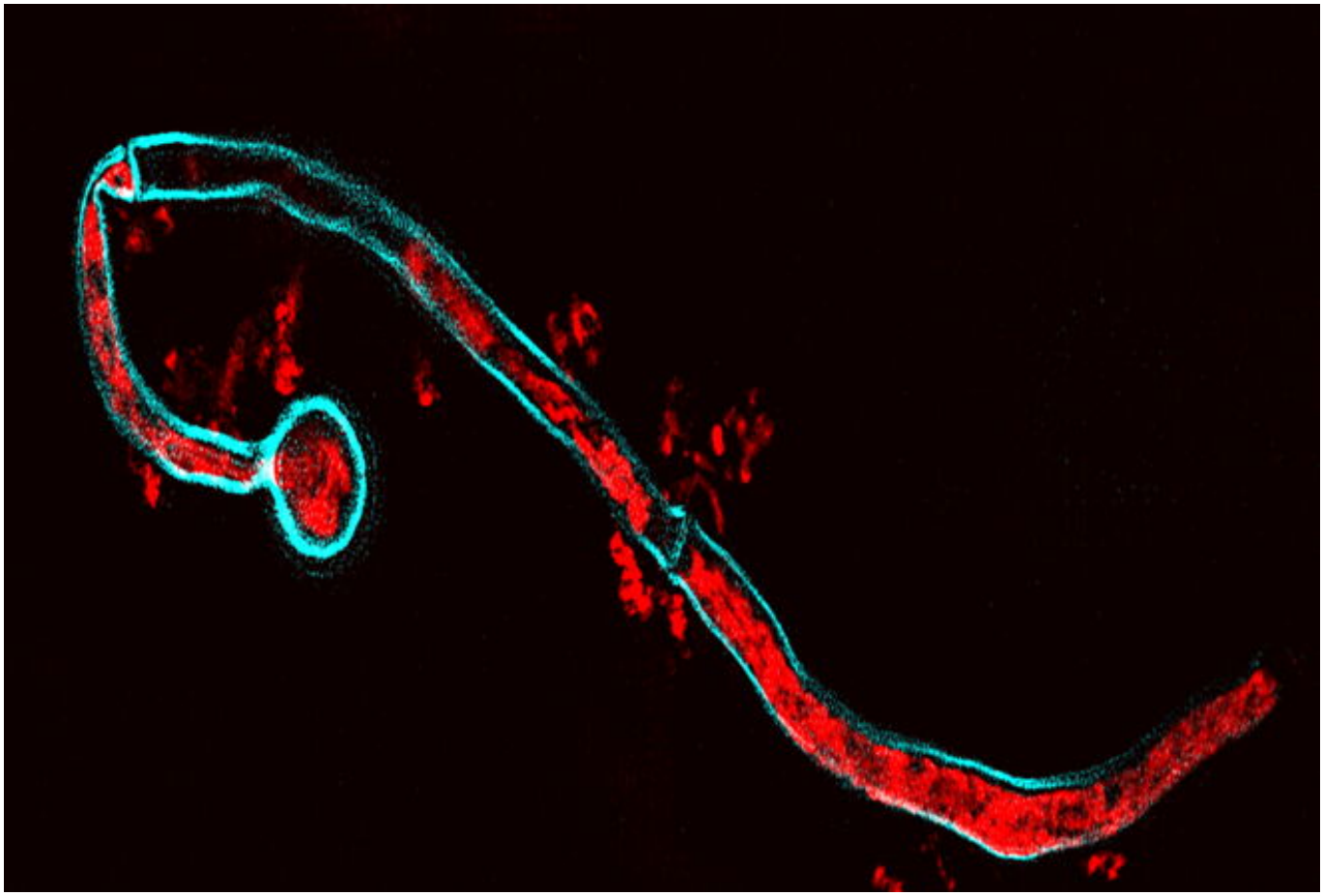
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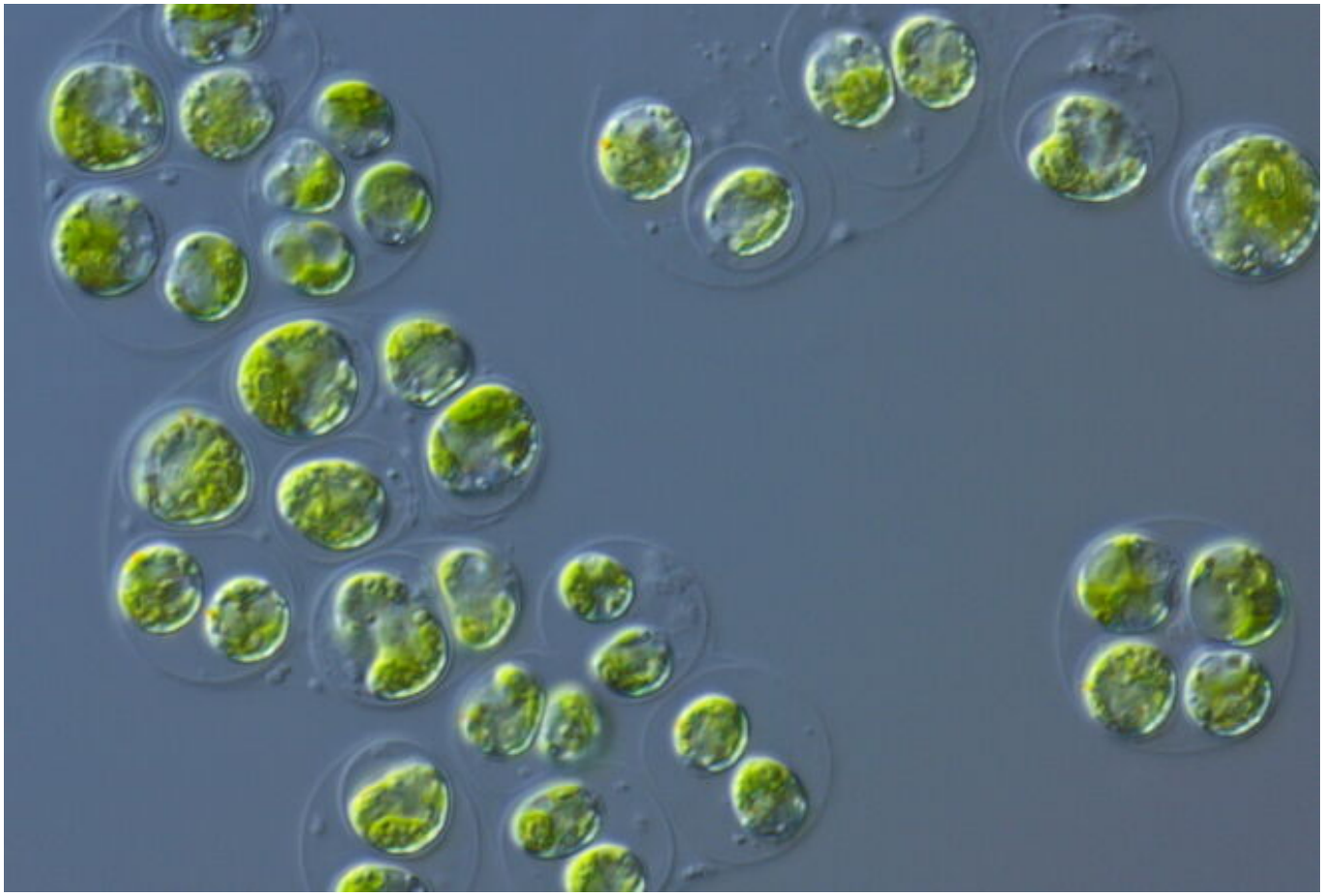


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