

REFEREED RESEARCH PUBLICATIONS – RUTH E. STARK

A. Refereed Published Research Articles (directly below)

B. Refereed Reviews, Perspectives, Book Chapters, Other Publications (following section)

(Preprints are listed together with the published articles.)

A. Refereed Published Research Articles

117. M. P. Wear, A. A. Hargett, J. E. Kelly, S. A. McConnell, C. J. Crawford, D. I. Freedberg, **R. E. Stark**, and A. Casadevall, “Lyophilization induces alterations in cryptococcal exopolysaccharide resulting in reduced antibody binding,” *BioRxiv* <https://www.biorxiv.org/content/10.1101/2022.03.04.483041v1>; *Carbohydrate Polymers*, online 4/29/22, <https://doi.org/10.1016/j.carbpol.2022.119547>.
116. A. Kligman, K. Dastmalchi, S. Smith, G. John, and **R. E. Stark**,* “Building blocks of the protective suberin plant polymer self-assemble into lamellar structures with antibacterial potential,” *ACS Omega*, **7**, 3978-3989 (2022). doi.org/10.1021/acsomega.1c04709; PMC8829861
115. R. P. Baker, C. Chrissian, **R. E. Stark** and A. Casadevall, “*Cryptococcus neoformans* melanization incorporates multiple catecholamines to produce polytypic melanin,” *J. Biol. Chem.*, Online 12/20/21, **298**(1), 101519 (2022). doi: <https://doi.org/10.1016/j.jbc.2021.101519> PMC8760516
114. K. Dastmalchi, O. Chira, M. Perez Rodriguez, B. Yoo, O. Serra, M. Figueras, and **R. E. Stark**,* “A chemical window into the impact of RNAi silencing of the *StNAC103* gene in potato tuber periderms: Soluble metabolites, suberized cell walls, and antibacterial defense,” *Phytochemistry*, **190**, 112885 (2021). PMID: PMC8434825
113. C. Chrissian, C. Lin, E. Camacho, A. Casadevall, A. Neiman,* and **R. E. Stark**,* “Unconventional constituents in the fungal cell walls of *Saccharomyces cerevisiae* and *Cryptococcus neoformans*,” invited manuscript, *J. of Fungi*, **6**, 329-345 (2020). Online 12/1/20, doi:10.3390/jof6040329; PMID: PMC7712904
112. C. Chrissian, E. Camacho, J. E. Kelly, H. Wang, A. Casadevall, and **R. E. Stark**,* “Solid-state NMR spectroscopy identifies three classes of lipids in *C. neoformans* melanized cell walls and whole fungal cells,” *J. Biol. Chem.*, **295**, 15083-15096 (2020). doi: 10.1074/jbc.RA120.015201, PMID: PMC7606693. bioRxiv: 10.1101/2020.07.13.200741
111. M. P. Lai, F. Katz,* C. Bernard, J. Storch, and **R. E. Stark**,* “Two fatty acid-binding proteins expressed in the intestine interact differently with endocannabinoids,” *Prot. Sci.*, **29**, 1606-1617 (2020). PMID: 32298508; PMID: PMC7314394; doi: 10.1002/pro.3875
110. M. Perez Rodriguez, K. Dastmalchi,* B. Yoo, and **R. E. Stark**,* “Needle in a Haystack: Antibacterial Activity-Guided Fractionation of a Potato Wound Tissue Extract,” *Bioorg. Med. Chem.*, **28**, 115428 (2020). PMID: [32216988](https://pubmed.ncbi.nlm.nih.gov/32216988/). PMID: PMC7237834; doi: [10.1016/j.bmc.2020.115428](https://doi.org/10.1016/j.bmc.2020.115428)
109. C. Chrissian, E. Camacho, M.S. Fu, R. Prados-Rosales, S. Chatterjee, R. J. B. Cordero, J. K. Lodge, A. Casadevall, and **R. E. Stark***, “Melanin deposition in two *Cryptococcus* species depends on cell-wall composition and flexibility,” *J. Biol. Chem.*, online 1/2/20, **295**, 1815-1828 (2020). PMID: [PMC7029119](https://pubmed.ncbi.nlm.nih.gov/32216988/) doi: 10.1101/2020.07.13.20074. Selected to represent Molecular Biophysics for the collection “*The Year in JBC: 2020*,” featured on the journal cover.
108. E. Camacho, R. Vij, C. Chrissian, R. Prados-Rosales, D. Gil, R. O’Meally, R.J.B. Cordero, R.N. Cole, M. McCaffrey, **R. E. Stark**, and A. Casadevall, “The structural unit of melanin in the cell wall of the fungal pathogen *Cryptococcus neoformans*,” *J. Biol. Chem.*, online 5/22/19, **294**, 10471-10489 (2019). [PMC6615676](https://pubmed.ncbi.nlm.nih.gov/32216988/), doi:10.1074/jbc.RA119.008684. *JBC RECOMMENDED READ*.
107. K. Dastmalchi,[^]M. P. Rodriguez,[^]J. Lin, B. Yoo, and **R. E. Stark***, “Temporal resistance of potato tubers: Antibacterial assays and metabolite profiling of wound-healing tissue extracts from contrasting cultivars,” *Phytochemistry*, **159**, 75-89 (2019) (online 12/28/18). doi.org/10.1016/j.phytochem.2018.12.007. PMID: PMC6555484.

106. S. Chatterjee, R. Prados-Rosales, S. Tan, V. C. Phan, C. Chrissian, B. Itin, A. Khajo, R. S. Magliozzo, A. Casadevall, and **R. E. Stark**,* “The melanization road more traveled by: precursor substrate effects on melanin synthesis in cell-free and fungal cell systems,” *J. Biol. Chem.*, online 11/1/18, **293**, 20157-20168 (2018). doi: 10.1074/jbc.RA118.005791, [PMC6311522](#)
105. G. Tedeschi, J. J. Benitez, L. Ceseracciu, K. Dastmalchi, B. Itin, **R. E. Stark**, Antonio Heredia, A. Athanassiou and J. A. Heredia-Guerrero, “Sustainable fabrication of plant cuticle-like packaging films from tomato pomace agro-waste, beeswax, and alginate,” *ACS Sustainable Chemistry and Engineering*, online 9/10/18, **6**, 14955–14966 (2018). doi: 10.1021/acssuschemeng.8b03450
104. C.D. Gibson, P.-J. Hatton, J.A. Bird, K. Nadelhoffer, C.P. Ward, **R.E. Stark**, and T.R. Filley, “Interacting controls of pyrolysis temperature and plant taxa on the degradability of PyOM in a fire-prone northern temperate forest soil,” *Soil Syst.* **2(3)**, 48 (17pp) (2018). doi:10.3390/soilsystems2030048 FEATURE PAPER.
103. L. Q. Jin,^ Q. Cai,^ W. Huang, K. Dastmalchi, J. Rigau, M. Molinas, M. Figueras, O. Serra, and **R. E. Stark***, “Potato native and wound periderms are differently affected by down-regulation of FHT, a Potato Feruloyl Transferase,” *Phytochemistry*, online 12/27/17, **147**, 30-48 (2018). doi: 10.1016/j.phytochem.2017.12.011. NIHMS930878. PubMed #29288888. PMID: PMC5801124.
102. E. Camacho, C. Chrissian, R. J. B. Cordero, L. Liporagi-Lopes, **R. E. Stark**, and A. Casadevall, “N-acetylglucosamine supplementation affects *Cryptococcus neoformans* cell wall composition and melanin architecture,” *Microbiology*, online 10/18/17, **163**, 1540-1556 (2018). doi: 10.1099/mic.0.000552. PMCID: PMC5775898
101. Q. Wang,^ S. Rizk,^ C. Bernard, M.P. Lai, D. Kam, J. Storch, and **R. E. Stark***, “Protocols and Pitfalls in Obtaining Fatty Acid-Binding Proteins for Biophysical Studies of Ligand-Protein and Protein-Protein Interactions,” *Biochem. Biophys. Rep.*, **10**, 318-324 (2017). doi: 10.1016/j.bbrep.2017.05.001. PMID: [PMC5614677](#)
100. J. F. Ceñido, B. Itin, **R. E. Stark**, Y. Huang, M. A. Oquendo, J. J. Mann, and M. E. Sublette, “Characterization of lipid rafts in human platelets using nuclear magnetic resonance: a pilot study,” *Biochem. Biophys. Rep.*, **10**, 132-136 (2017). doi: 10.1016/j.bbrep.2017.03.005. PMCID: [PMC5614646](#)
99. W. Huang, O. Serra, K. Dastmalchi, L. Jin, L. Yang, and **R. E. Stark***, “Comprehensive MS and Solid-state NMR Metabolic Profiling Reveals Molecular Variations in Native Periderms from Four *Solanum tuberosum* Potato Cultivars,” *J. Agric. Food Chem.*, **65**, 2258–2274 (2017). DOI: 10.1021/acs.jafc.6b05179. PMID 28215068.
98. P.-J. Hatton,^ S. Chatterjee,^ T. Filley, K. Dastmalchi, A. F. Plante, S. Abiven, X. Gao, C. A. Masiello, S. Leavitt, K. J. Nadelhoffer, **R. E. Stark**, and J. A. Bird, "Tree Taxa and Pyrolysis Temperature Interact to Control the Efficacy of Pyrogenic Organic Matter Formation," *Biogeochemistry*, **130**, 103-116 (2016). doi:10.1007/s10533-016-0245-1.
97. K. Dastmalchi, I. Wang, and **R. E. Stark***, “Potato Wound-Healing Tissues: A Rich Source of Natural Antioxidant Molecules with Potential for Food Preservation,” *Food Chemistry*, **210**, 473-480 (2016). DOI:10.1016/j.foodchem.2016.04.123 PMCID: PMC4857770
96. C. Fernandes, R. Prados-Rosales, B.M.A. Silva, A. Nakouzi-Naranjo, M. Zuzarte, S. Chatterjee, **R. E. Stark**, A. Casadevall, and T. Gonçalves, “Activation of Melanin Synthesis in *Alternaria infectoria* by Antifungal Drugs,” *Antimicrobial Agents and Chemotherapy*, **60(3)**, 1216–1225 (2016).
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93. K. Dastmalchi, L. Kallash, I. Wang, C.V. Phan, W. Huang, O. Serra, and **R. E. Stark***, “Defensive Armor of Potato Tubers: Nonpolar Metabolite Profiling, Antioxidant Assessment, and Solid-State NMR Compositional Analysis of Suberin-enriched Wound-Healing Tissues,” *J. Agric. Food Chem.*, **63**(30), 6810–6822 (2015). DOI: 10.1021/acs.jafc.5b03206 PMID: PMC4857770
92. S. Chatterjee, R. Prados-Rosales, B. Itin, A. Casadevall, and **R.E. Stark***, “Solid-state NMR Reveals the Carbon-based Molecular Architecture of Melanized *Cryptococcus neoformans* Fungal Cells,” *J. Biol. Chem.*, **290**, 13779-13790 (2015).
91. S. Chatterjee, R. Prados-Rosales, B. Itin, S. Tan, A. Casadevall, and **R.E. Stark***, “Demonstration of a Common Indole-based Aromatic Core in Natural and Synthetic Eumelanins by Solid-state NMR,” *Org. Biomol. Chem.*, **12**(34), 6730 - 6736 (2014).
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81. A.J. Matas, T.H. Yeats, G.J. Buda, Y. Zheng, S. Chatterjee, T. Tohge, L. Ponnala, A. Adato, A. Aharoni **R.E. Stark**, A.R. Fernie, J. Fei, J.J. Giovannoni, and J.K.C. Rose, “Tissue and cell type specific transcriptome profiling of expanding tomato fruit provides insights into metabolic and regulatory specialization and cuticle formation,” *The Plant Cell*, **23**, 3893-3910 (2011).
80. Y. He, R. Estephan, X. Yang, A. Vela, H. Wang, C. Bernard, and **R.E. Stark***, “An NMR-Based Structural Rationale for Contrasting Stoichiometry and Ligand Binding Site(s) in Fatty Acid-binding Proteins,” *Biochemistry*, **50**, 1283-1295 (2011). PMID: PMC3072248.
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