

REFERENCES

- Aburto, N.J. *et al.* (2013) 'An evaluation of a global vitamin and mineral nutrition surveillance system', *ALAN*, 63(2). Available at: <http://www.alanrevista.org/ediciones/2013/2/art-1/> (Accessed: 13 May 2025).
- Affonfere, M. *et al.* (2023) 'In-vitro Digestibility Methods and Factors Affecting Minerals Bioavailability: A Review', *Food Reviews International*, 39(2), pp. 1014–1042. Available at: <https://doi.org/10.1080/87559129.2021.1928692>.
- Ahmad, M.I. *et al.* (2022) 'A review on mycoprotein: History, nutritional composition, production methods, and health benefits', *Trends in Food Science & Technology*, 121, pp. 14–29. Available at: <https://doi.org/10.1016/j.tifs.2022.01.027>.
- Akinsemolu, A.A. and Onyeaka, H.N. (2025) 'Mycoproteins as sustainable food sources: current applications and future prospects', *Discover Applied Sciences*, 7(3), pp. 1–11. Available at: <https://doi.org/10.1007/s42452-025-06614-0>.
- Alderman, S.L. and Gillis, T.E. (eds) (2024) *Encyclopedia of fish physiology: from genome to environment*. 2nd edition. London: Academic Press.
- Alexandropoulou, I. *et al.* (2025) 'Sustainable HEalthy Diet practices: a cross-sectional analysis of an adult Greek sample', *Nutrition Journal*, 24(1), pp. 1–14. Available at: <https://doi.org/10.1186/s12937-025-01096-7>.
- Anghileri, L.J. and Thouvenot, P. (1998) 'ATP in iron overload-induced intracellular calcium changes.', *International Journal of Molecular Medicine*, 1(5), pp. 869–942. Available at: <https://doi.org/10.3892/ijmm.1.5.869>.
- Beaufay, F. *et al.* (2020) 'Polyphosphate Functions In Vivo as an Iron Chelator and Fenton Reaction Inhibitor', *mBio*, 11(4), pp. e01017–20. Available at: <https://doi.org/10.1128/mBio.01017-20>.
- Bhalla, K. *et al.* (2022) 'The phosphate language of fungi', *Trends in microbiology*, 30(4), pp. 338–349. Available at: <https://doi.org/10.1016/j.tim.2021.08.002>.
- Blatzer, M., Binder, U. and Haas, H. (2011) 'The metalloredutase FreB is involved in adaptation of *Aspergillus fumigatus* to iron starvation', *Fungal Genetics and Biology*, 48(11), pp. 1027–1033. Available at: <https://doi.org/10.1016/j.fgb.2011.07.009>.
- Blechert, O. *et al.* (2023) 'Nutritional requirements of the human pathogenic fungus, *Trichophyton rubrum*, and nutritional immunity of the human skin as barrier against colonization', *Fungal Biology Reviews*, 45, p. 100330. Available at: <https://doi.org/10.1016/j.fbr.2023.100330>.

Blomhoff, R. *et al.* (2023) *Nordic Nutrition Recommendations 2023: Integrating Environmental Aspects*. Copenhagen: Nordic Council of Ministers.

Bonilla, M. and Cunningham, K.W. (2002) 'Calcium release and influx in yeast: TRPC and VGCC rule another kingdom', *Science's STKE: signal transduction knowledge environment*, 2002(127), p. pe17. Available at: <https://doi.org/10.1126/stke.2002.127.pe17>.

Brodkorb, A. *et al.* (2019) 'INFOGEST static in vitro simulation of gastrointestinal food digestion', *Nature Protocols*, 14(4), pp. 991–1014. Available at: <https://doi.org/10.1038/s41596-018-0119-1>.

Burgstaller, W. and Schinner, F. (1993) 'Leaching of metals with fungi', *Journal of Biotechnology*, 27(2), pp. 91–116. Available at: [https://doi.org/10.1016/0168-1656\(93\)90101-R](https://doi.org/10.1016/0168-1656(93)90101-R).

Butchko, H.H. and Petersen, B.J. (2005) 'FUNCTIONAL FOODS | Regulatory Aspects', in B. Caballero (ed.) *Encyclopedia of Human Nutrition (Second Edition)*. Oxford: Elsevier, pp. 366–375. Available at: <https://doi.org/10.1016/B0-12-226694-3/02138-4>.

Bygrave, F.L. (1978) 'Mitochondria and the Control of Intracellular Calcium', *Biological Reviews*, 53(1), pp. 43–79. Available at: <https://doi.org/10.1111/j.1469-185X.1978.tb00992.x>.

Calvo, M.S. and Lamberg-Allardt, C.J. (2015) 'Phosphorus', *Advances in Nutrition (Bethesda, Md.)*, 6(6), pp. 860–862. Available at: <https://doi.org/10.3945/an.115.008516>.

Canessa, P. and Larrondo, L.F. (2013) 'Environmental responses and the control of iron homeostasis in fungal systems', *Applied Microbiology and Biotechnology*, 97(3), pp. 939–955. Available at: <https://doi.org/10.1007/s00253-012-4615-x>.

Cardoso, C. *et al.* (2015) 'Bioaccessibility assessment methodologies and their consequences for the risk–benefit evaluation of food', *Trends in Food Science & Technology*, 41(1), pp. 5–23. Available at: <https://doi.org/10.1016/j.tifs.2014.08.008>.

Cheng, Y. *et al.* (1994) 'Effects of Extracellular ATP on Fe²⁺-Induced Cytotoxicity in PC-12 Cells', *Journal of Neurochemistry*, 63(3), pp. 895–902. Available at: <https://doi.org/10.1046/j.1471-4159.1994.63030895.x>.

Cho, M. *et al.* (2018) 'Vacuolar zinc transporter Zrc1 is required for detoxification of excess intracellular zinc in the human fungal pathogen *Cryptococcus neoformans*', *Journal of microbiology (Seoul, Korea)*, 56(1), pp. 65–71. Available at: <https://doi.org/10.1007/s12275-018-7475-y>.

Clem, J. and Barthel, B. (2021) ‘A Look at Plant-Based Diets’, *Missouri Medicine*, 118(3), pp. 233–238.

Cook, J.D. (1984) ‘Parenteral trace elements: iron.’, *Bulletin of the New York Academy of Medicine*, 60(2), pp. 156–162.

Cunningham, K.W. (2011) ‘Acidic Calcium Stores of *Saccharomyces cerevisiae*’, *Cell calcium*, 50(2), pp. 129–138. Available at: <https://doi.org/10.1016/j.ceca.2011.01.010>.

Cyert, M.S. (2003) ‘Calcineurin signaling in *Saccharomyces cerevisiae*: how yeast go crazy in response to stress’, *Biochemical and Biophysical Research Communications*, 311(4), pp. 1143–1150. Available at: [https://doi.org/10.1016/S0006-291X\(03\)01552-3](https://doi.org/10.1016/S0006-291X(03)01552-3).

Demaegd, D. *et al.* (2013) ‘Newly characterized Golgi-localized family of proteins is involved in calcium and pH homeostasis in yeast and human cells’, *Proceedings of the National Academy of Sciences of the United States of America*, 110(17), pp. 6859–6864. Available at: <https://doi.org/10.1073/pnas.1219871110>.

Dzurendova, S. *et al.* (2021) ‘Calcium Affects Polyphosphate and Lipid Accumulation in Mucoromycota Fungi’, *Journal of Fungi*, 7(4), p. 300. Available at: <https://doi.org/10.3390/jof7040300>.

Egger, L. *et al.* (2017) ‘Physiological comparability of the harmonized INFOGEST *in vitro* digestion method to *in vivo* pig digestion’, *Food Research International*, 102, pp. 567–574. Available at: <https://doi.org/10.1016/j.foodres.2017.09.047>.

Eide, D.J. (2006) ‘Zinc transporters and the cellular trafficking of zinc’, *Biochimica et Biophysica Acta (BBA) - Molecular Cell Research*, 1763(7), pp. 711–722. Available at: <https://doi.org/10.1016/j.bbamcr.2006.03.005>.

Eide, D.J. (2020) ‘Transcription factors and transporters in zinc homeostasis: lessons learned from fungi’, *Critical Reviews in Biochemistry and Molecular Biology*, 55(1), pp. 88–110. Available at: <https://doi.org/10.1080/10409238.2020.1742092>.

Etcheverry, P., Grusak, M.A. and Fleige, L.E. (2012) ‘Application of *in vitro* bioaccessibility and bioavailability methods for calcium, carotenoids, folate, iron, magnesium, polyphenols, zinc, and vitamins B(6), B(12), D, and E’, *Frontiers in Physiology*, 3, p. 317. Available at: <https://doi.org/10.3389/fphys.2012.00317>.

European Commission (2003) *Opinion of the Scientific Committee on Food on the Tolerable Upper Intake Level of Zinc*. SCF/CS/NUT/UPPLEV/62 Final. Brussels, Belgium: European Commission: Health and Consumer Protection Directorate General.

Farzanfar, F. *et al.* (2024) ‘The effect of ultrasound pretreatment on the antioxidant properties of hydrolyzed protein from flaxseed meal using alcalase and pancreatin enzymes by response surface methodology’, *Journal of food science and technology(Iran)*, 21(147). Available at: <https://doi.org/10.22034/FSCT.21.147.187>.

Feng, X. *et al.* (2019) ‘Siderophore (from *Synechococcus* sp. PCC 7002)-Chelated Iron Promotes Iron Uptake in Caco-2 Cells and Ameliorates Iron Deficiency in Rats’, *Marine Drugs*, 17(12), p. 709. Available at: <https://doi.org/10.3390/md17120709>.

Finnigan, T.J.A., Theobald, H.E. and Bajka, B. (2025) ‘Mycoprotein: A Healthy and Sustainable Source of Alternative Protein-Based Foods’, *Annual Review of Food Science and Technology*, 16(1), pp. 105–125. Available at: <https://doi.org/10.1146/annurev-food-111523-121802>.

Fomina, M. *et al.* (2004) ‘Zinc Phosphate and Pyromorphite Solubilization by Soil Plant-Symbiotic Fungi’, *Geomicrobiology Journal*, 21, pp. 351–366. Available at: <https://doi.org/10.1080/01490450490462066>.

Fomina, M., Burford, E.P. and Gadd, G.M. (2005) ‘Toxic Metals and Fungal Communities’, in *The Fungal Community*. 3rd edn. CRC Press.

Gadd, G.M. (1993) ‘Interactions of Fungi with Toxic Metals’, in K.A. Powell, A. Renwick, and J.F. Peberdy (eds) *The Genus Aspergillus*. Boston, MA: Springer US, pp. 361–374. Available at: https://doi.org/10.1007/978-1-4899-0981-7_28.

Gadd, G.M. (2000) ‘Bioremedial potential of microbial mechanisms of metal mobilization and immobilization’, *Current Opinion in Biotechnology*, 11(3), pp. 271–279. Available at: [https://doi.org/10.1016/S0958-1669\(00\)00095-1](https://doi.org/10.1016/S0958-1669(00)00095-1).

Gadd, G.M. (2007) ‘Geomycology: biogeochemical transformations of rocks, minerals, metals and radionuclides by fungi, bioweathering and bioremediation’, *Mycological Research*, 111(1), pp. 3–49. Available at: <https://doi.org/10.1016/j.mycres.2006.12.001>.

Garstka, K. *et al.* (2024) ‘*Aspergillus fumigatus* ZrfC Zn(II) transporter scavengers zincophore-bound Zn(II)’, *Dalton Transactions*, 53(6), pp. 2848–2858. Available at: <https://doi.org/10.1039/D3DT04083F>.

Gorbushina, A.A. *et al.* (2002) ‘Microbial Communities on the Monuments of Moscow and St. Petersburg: Biodiversity and Trophic Relations’, *Microbiology*, 71(3), pp. 350–356. Available at: <https://doi.org/10.1023/A:1015823232025>.

Gründlinger, M. *et al.* (2013) ‘*Aspergillus fumigatus* SidJ Mediates Intracellular Siderophore Hydrolysis’, *Applied and Environmental Microbiology*, 79(23), pp. 7534–7536. Available at: <https://doi.org/10.1128/AEM.01285-13>.

Guerra, A. *et al.* (2012) ‘Relevance and challenges in modeling human gastric and small intestinal digestion’, *Trends in Biotechnology*, 30(11), pp. 591–600. Available at: <https://doi.org/10.1016/j.tibtech.2012.08.001>.

Haas, H. (2014) ‘Fungal siderophore metabolism with a focus on *Aspergillus fumigatus*’, *Natural Product Reports*, 31(10), pp. 1266–1276. Available at: <https://doi.org/10.1039/C4NP00071D>.

He, L. *et al.* (2011) ‘Antifungal activity of zinc oxide nanoparticles against *Botrytis cinerea* and *Penicillium expansum*’, *Microbiological Research*, 166(3), pp. 207–215. Available at: <https://doi.org/10.1016/j.micres.2010.03.003>.

Hertzler, S.R. *et al.* (2020) ‘Plant Proteins: Assessing Their Nutritional Quality and Effects on Health and Physical Function’, *Nutrients*, 12(12), p. 3704. Available at: <https://doi.org/10.3390/nu12123704>.

Hider, R.C. and Kong, X. (2010) ‘Chemistry and biology of siderophores’, *Natural Product Reports*, 27(5), pp. 637–657. Available at: <https://doi.org/10.1039/B906679A>.

Hissen, A.H.T. *et al.* (2005) ‘The *Aspergillus fumigatus* Siderophore Biosynthetic Gene *sidA*, Encoding l-Ornithine N5-Oxygenase, Is Required for Virulence’, *Infection and Immunity*, 73(9), pp. 5493–5503. Available at: <https://doi.org/10.1128/iai.73.9.5493-5503.2005>.

Hosios, A.M. and Vander Heiden, M.G. (2018) ‘The redox requirements of proliferating mammalian cells’, *Journal of Biological Chemistry*, 293(20), pp. 7490–7498. Available at: <https://doi.org/10.1074/jbc.TM117.000239>.

Howe, R., Evans, R.L. and Ketteridge, S.W. (1997) ‘Copper-binding proteins in ectomycorrhizal fungi’, *The New Phytologist*, 135(1), pp. 123–131. Available at: <https://doi.org/10.1046/j.1469-8137.1997.00622.x>.

Howlett, N.G. and Avery, S.V. (1997) ‘Relationship between cadmium sensitivity and degree of plasma membrane fatty acid unsaturation in *Saccharomyces cerevisiae*’, *Applied Microbiology and Biotechnology*, 48(4), pp. 539–545. Available at: <https://doi.org/10.1007/s002530051093>.

Huang, L., Drake, V.J. and Ho, E. (2015) ‘Zinc’, *Advances in Nutrition (Bethesda, Md.)*, 6(2), pp. 224–226. Available at: <https://doi.org/10.3945/an.114.006874>.

Hunter, D.R. and Segel, I.H. (1973) ‘Effect of Weak Acids on Amino Acid Transport by *Penicillium chrysogenum*: Evidence for a Proton or Charge Gradient as the Driving Force’, *Journal of Bacteriology*, 113(3), pp. 1184–1192. Available at: <https://doi.org/10.1128/jb.113.3.1184-1192.1973>.

Ikeh, M., Ahmed, Y. and Quinn, J. (2017) 'Phosphate Acquisition and Virulence in Human Fungal Pathogens', *Microorganisms*, 5(3), p. 48. Available at: <https://doi.org/10.3390/microorganisms5030048>.

Jain, R. *et al.* (2011) 'The MAP kinase MpkA controls cell wall integrity, oxidative stress response, gliotoxin production and iron adaptation in *Aspergillus fumigatus*', *Molecular Microbiology*, 82(1), pp. 39–53. Available at: <https://doi.org/10.1111/j.1365-2958.2011.07778.x>.

Jatuwong, K. *et al.* (2020) 'Bioprocess for Production, Characteristics, and Biotechnological Applications of Fungal Phytases', *Frontiers in Microbiology*, 11, p. 188. Available at: <https://doi.org/10.3389/fmicb.2020.00188>.

Join FAO/WHO (2004) *Vitamin and mineral requirements in human nutrition : report of a joint FAO/WHO expert consultation, Bangkok, Thailand, 21–30 September 1998*. World Health Organization and Food and Agriculture Organization of the United Nations.

Kaplan, C.D. and Kaplan, J. (2009) 'Iron Acquisition and Transcriptional Regulation', *Chemical Reviews*, 109(10), pp. 4536–4552. Available at: <https://doi.org/10.1021/cr9001676>.

Karimi, S. *et al.* (2018) 'Use of Organic Wastes and Industrial By-Products to Produce Filamentous Fungi with Potential as Aqua-Feed Ingredients', *Sustainability*, 10(9), p. 3296. Available at: <https://doi.org/10.3390/su10093296>.

Kiela, P.R. and Ghishan, F.K. (2016) 'Physiology of Intestinal Absorption and Secretion', *Best Practice & Research. Clinical Gastroenterology*, 30(2), pp. 145–159. Available at: <https://doi.org/10.1016/j.bpg.2016.02.007>.

Kikuchi, Y. *et al.* (2014) 'Polyphosphate accumulation is driven by transcriptome alterations that lead to near-synchronous and near-equivalent uptake of inorganic cations in an arbuscular mycorrhizal fungus', *New Phytologist*, 204(3), pp. 638–649. Available at: <https://doi.org/10.1111/nph.12937>.

Lanfranco, L. *et al.* (2002) 'Zinc ions alter morphology and chitin deposition in an ericoid fungus', *European journal of histochemistry: EJH*, 46(4), pp. 341–350. Available at: <https://doi.org/10.4081/1746>.

Lange, M. and Peiter, E. (2020) 'Calcium Transport Proteins in Fungi: The Phylogenetic Diversity of Their Relevance for Growth, Virulence, and Stress Resistance', *Frontiers in Microbiology*, 10. Available at: <https://doi.org/10.3389/fmicb.2019.03100>.

Leal, S.M. *et al.* (2013) 'Correction: Targeting Iron Acquisition Blocks Infection with the Fungal Pathogens *Aspergillus fumigatus* and *Fusarium oxysporum*', *PLoS*

Pathogens. Edited by M. Feldmesser, 9(7). Available at: <https://doi.org/10.1371/annotation/4f388450-90fe-4c65-9b9b-71a2b7935ac0>.

Leonhardt, T. *et al.* (2014) ‘Metallothionein-like peptides involved in sequestration of Zn in the Zn-accumulating ectomycorrhizal fungus *Russula atropurpurea*’, *Metallomics: Integrated Biometal Science*, 6(9), pp. 1693–1701. Available at: <https://doi.org/10.1039/c4mt00141a>.

Li, L. *et al.* (2001) ‘CCC1 is a transporter that mediates vacuolar iron storage in yeast’, *The Journal of Biological Chemistry*, 276(31), pp. 29515–29519. Available at: <https://doi.org/10.1074/jbc.M103944200>.

Łoboda, D. and Rowińska-Żyrek, M. (2017) ‘Zinc binding sites in Pra1, a zincophore from *Candida albicans*’, *Dalton Transactions*, 46(40), pp. 13695–13703. Available at: <https://doi.org/10.1039/C7DT01675A>.

López-Berges, M.S. *et al.* (2012) ‘HapX-Mediated Iron Homeostasis Is Essential for Rhizosphere Competence and Virulence of the Soilborne Pathogen *Fusarium oxysporum*’, *The Plant Cell*, 24(9), pp. 3805–3822. Available at: <https://doi.org/10.1105/tpc.112.098624>.

Lotan, R. *et al.* (1976) ‘Effect of Calcium Ions on Growth and Metabolism of *Saccharomyces carlsbergensis*’, *Microbiology*, 92(1), pp. 76–80. Available at: <https://doi.org/10.1099/00221287-92-1-76>.

MacDiarmid, C.W., Milanick, M.A. and Eide, D.J. (2003) ‘Induction of the ZRC1 metal tolerance gene in zinc-limited yeast confers resistance to zinc shock’, *The Journal of Biological Chemistry*, 278(17), pp. 15065–15072. Available at: <https://doi.org/10.1074/jbc.M300568200>.

Marcus, J.B. (2013) ‘Chapter 1 - Nutrition Basics: What Is Inside Food, How It Functions and Healthy Guidelines: The Nutrients in Foods and Beverages in Healthy Cooking and Baking’, in J.B. Marcus (ed.) *Culinary Nutrition*. San Diego: Academic Press, pp. 1–50. Available at: <https://doi.org/10.1016/B978-0-12-391882-6.00001-7>.

Martin, D.C. *et al.* (2011) ‘New regulators of a high affinity Ca²⁺ influx system revealed through a genome-wide screen in yeast’, *The Journal of Biological Chemistry*, 286(12), pp. 10744–10754. Available at: <https://doi.org/10.1074/jbc.M110.177451>.

Matute, R.G. *et al.* (2011) ‘Copper and Zinc Bioaccumulation and Bioavailability of *Ganoderma lucidum*’, *Journal of Medicinal Food*, 14(10), pp. 1273–1279. Available at: <https://doi.org/10.1089/jmf.2010.0206>.

McAfee, B.J. *et al.* (2001) 'Biosorption of Metal Ions Using Chitosan, Chitin, and Biomass of *Rhizopus Oryzae*', *Separation Science and Technology*, 36(14), pp. 3207–3222. Available at: <https://doi.org/10.1081/SS-100107768>.

Minekus, M. *et al.* (2014) 'A standardised static in vitro digestion method suitable for food – an international consensus', *Food & Function*, 5(6), pp. 1113–1124. Available at: <https://doi.org/10.1039/C3FO60702J>.

Misslinger, M. *et al.* (2021) 'Fungal iron homeostasis with a focus on *Aspergillus fumigatus*', *Biochimica et Biophysica Acta (BBA) - Molecular Cell Research*, 1868(1), p. 118885. Available at: <https://doi.org/10.1016/j.bbamcr.2020.118885>.

Morris, A.L. and Mohiuddin, S.S. (2025) 'Biochemistry, Nutrients', in *StatPearls. Treasure Island (FL): StatPearls Publishing*. Available at: <https://www.ncbi.nlm.nih.gov/books/NBK554545/> (Accessed: 15 May 2025).

Peiter, E. *et al.* (2005) 'The *Saccharomyces cerevisiae* Ca²⁺ channel Cch1pMid1p is essential for tolerance to cold stress and iron toxicity', *FEBS letters*, 579(25), pp. 5697–5703. Available at: <https://doi.org/10.1016/j.febslet.2005.09.058>.

Perotto, S. and Martino, E. (2001) 'Molecular and cellular mechanisms of heavy metal tolerance in mycorrhizal fungi: What perspectives for bioremediation?', *Minerva Biotechnologica*, 13(1), p. 55.

Ramos, I.B. *et al.* (2010) 'Calcium- and polyphosphate-containing acidic granules of sea urchin eggs are similar to acidocalcisomes, but are not the targets for NAADP', *Biochemical Journal*, 429(3), pp. 485–495. Available at: <https://doi.org/10.1042/BJ20091956>.

Robinson, J.R., Isikhuemhen, O.S. and Anike, F.N. (2021) 'Fungal–Metal Interactions: A Review of Toxicity and Homeostasis', *Journal of Fungi*, 7(3), p. 225. Available at: <https://doi.org/10.3390/jof7030225>.

Rosenfeld, L. *et al.* (2010) 'The effect of phosphate accumulation on metal ion homeostasis in *Saccharomyces cerevisiae*', *JBIC Journal of Biological Inorganic Chemistry*, 15(7), pp. 1051–1062. Available at: <https://doi.org/10.1007/s00775-010-0664-8>.

Ross, A.C. *et al.* (2011) 'The 2011 Dietary Reference Intakes for Calcium and Vitamin D: what dietetics practitioners need to know', *Journal of the American Dietetic Association*, 111(4), pp. 524–527. Available at: <https://doi.org/10.1016/j.jada.2011.01.004>.

Rousta, N. *et al.* (2021) 'Filamentous Fungus *Aspergillus oryzae* for Food: From Submerged Cultivation to Fungal Burgers and Their Sensory Evaluation—A Pilot Study', *Foods*, 10(11), p. 2774. Available at: <https://doi.org/10.3390/foods10112774>.

Ruytinx, J. *et al.* (2013) ‘Zinc export results in adaptive zinc tolerance in the ectomycorrhizal basidiomycete *Suillus bovinus*’, *Metallomics*, 5(9), p. 1225. Available at: <https://doi.org/10.1039/c3mt00061c>.

Sar, T. *et al.* (2022) ‘Demo-scale production of protein-rich fungal biomass from potato protein liquor for use as innovative food and feed products’, *Food Bioscience*, 47, p. 101637. Available at: <https://doi.org/10.1016/j.fbio.2022.101637>.

Schrettl, M. *et al.* (2004) ‘Siderophore biosynthesis but not reductive iron assimilation is essential for *Aspergillus fumigatus* virulence’, *The Journal of Experimental Medicine*, 200(9), pp. 1213–1219. Available at: <https://doi.org/10.1084/jem.20041242>.

Simm, C. *et al.* (2007) ‘*Saccharomyces cerevisiae* vacuole in zinc storage and intracellular zinc distribution’, *Eukaryotic Cell*, 6(7), pp. 1166–1177. Available at: <https://doi.org/10.1128/EC.00077-07>.

Singh, P. *et al.* (2016) ‘Stress response in medically important *Mucorales*’, *Mycoses*, 59(10), pp. 628–635. Available at: <https://doi.org/10.1111/myc.12512>.

Stoyanovsky, D.A. and Cederbaum, A.I. (1998) ‘Redox-Cycling of Iron Ions Triggers Calcium Release From Liver Microsomes’, *Free Radical Biology and Medicine*, 24(5), pp. 745–753. Available at: [https://doi.org/10.1016/S0891-5849\(97\)00328-6](https://doi.org/10.1016/S0891-5849(97)00328-6).

Sues, A. *et al.* (2005) ‘Ethanol production from hexoses, pentoses, and dilute-acid hydrolyzate by’, *FEMS Yeast Research*, 5(6–7), pp. 669–676. Available at: <https://doi.org/10.1016/j.femsyr.2004.10.013>.

Taherzadeh, M. *et al.* (2003) ‘Production of mycelium biomass and ethanol from paper pulp sulfite liquor by *Rhizopus oryzae*’, *Bioresource Technology*, 88(3), pp. 167–177. Available at: [https://doi.org/10.1016/S0960-8524\(03\)00010-5](https://doi.org/10.1016/S0960-8524(03)00010-5).

Thammahong, A. *et al.* (2017) ‘Central Role of the Trehalose Biosynthesis Pathway in the Pathogenesis of Human Fungal Infections: Opportunities and Challenges for Therapeutic Development’, *Microbiology and Molecular Biology Reviews*, 81(2), pp. e00053-16. Available at: <https://doi.org/10.1128/MMBR.00053-16>.

Tisi, R. *et al.* (2016) ‘Calcium homeostasis and signaling in fungi and their relevance for pathogenicity of yeasts and filamentous fungi’, *AIMS Molecular Science*, 3(4), pp. 505–549. Available at: <https://doi.org/10.3934/molsci.2016.4.505>.

United Nations Department of Economic and Social Affairs, Population Division (2024) *World Population Prospects 2024: Summary of Results*. UN DESA/POP/2024/TR/NO. 9. New York: United Nations.

Verhoeckx, K. *et al.* (eds) (2015) *The Impact of Food Bioactives on Health*. Cham: Springer International Publishing. Available at: <https://doi.org/10.1007/978-3-319-16104-4>.

Vicentefranqueira, R. *et al.* (2018) ‘The Transcription Factor ZafA Regulates the Homeostatic and Adaptive Response to Zinc Starvation in *Aspergillus fumigatus*’, *Genes*, 9(7), p. 318. Available at: <https://doi.org/10.3390/genes9070318>.

Vicentefranqueira, R. *et al.* (2019) ‘The interplay between zinc and iron homeostasis in *Aspergillus fumigatus* under zinc-replete conditions relies on the iron-mediated regulation of alternative transcription units of zafA and the basal amount of the ZafA zinc-responsiveness transcription factor’, *Environmental Microbiology*, 21(8), pp. 2787–2808. Available at: <https://doi.org/10.1111/1462-2920.14618>.

Viladevall, L. *et al.* (2004) ‘Characterization of the calcium-mediated response to alkaline stress in *Saccharomyces cerevisiae*’, *The Journal of Biological Chemistry*, 279(42), pp. 43614–43624. Available at: <https://doi.org/10.1074/jbc.M403606200>.

Walvekar, A.S. *et al.* (2018) ‘Methionine coordinates a hierarchically organized anabolic program enabling proliferation’, *Molecular Biology of the Cell*. Edited by D.J. Lew, 29(26), pp. 3183–3200. Available at: <https://doi.org/10.1091/mbc.E18-08-0515>.

Wang, R. *et al.* (2024) ‘In vitro protein digestibility and mineral accessibility of edible filamentous Fungi cultivated in oat flour’, *NFS Journal*, 36, p. 100189. Available at: <https://doi.org/10.1016/j.nfs.2024.100189>.

Wikandari, R. *et al.* (2023) ‘Development of Meat Substitutes from Filamentous Fungi Cultivated on Residual Water of Tempeh Factories’, *Molecules*, 28(3), p. 997. Available at: <https://doi.org/10.3390/molecules28030997>.

Wood, R.J. (2005) ‘BIOAVAILABILITY’, in B. Caballero (ed.) *Encyclopedia of Human Nutrition (Second Edition)*. Oxford: Elsevier, pp. 195–201. Available at: <https://doi.org/10.1016/B0-12-226694-3/00026-0>.

Yasmin, S. *et al.* (2009) ‘The interplay between iron and zinc metabolism in *Aspergillus fumigatus*’, *Fungal Genetics and Biology*, 46(9), pp. 707–713. Available at: <https://doi.org/10.1016/j.fgb.2009.05.003>.

Zhai, P., Chai, Y. and Lu, L. (2022) ‘Fungal Zinc Homeostasis and Its Potential as an Antifungal Target: A Focus on the Human Pathogen *Aspergillus fumigatus*’, *Microorganisms*, 10(12), p. 2469. Available at: <https://doi.org/10.3390/microorganisms10122469>.