

Selected citations with reference to BMAA or BMAA isomers AEG and DAB

- Newell, M.E., Adhikari, S. and Halden, R.U., 2021. Systematic and state-of the science review of the role of environmental factors in Amyotrophic Lateral Sclerosis (ALS) or Lou Gehrig's Disease. *Science of The Total Environment*, p.152504.
- Metcalf, J.S., Banack, S.A., Richer, R. and Cox, P.A., 2015. Neurotoxic amino acids and their isomers in desert environments. *Journal of Arid Environments*, 112, pp.140-144.
- Banack, S.A., Johnson, H.E., Cheng, R. and Cox, P.A., 2007. Production of the neurotoxin BMAA by a marine cyanobacterium. *Marine drugs*, 5(4), pp.180-196.
- Mondo, K., Hammerschlag, N., Basile, M., Pablo, J., Banack, S.A. and Mash, D.C., 2012. Cyanobacterial neurotoxin β -N-methylamino-L-alanine (BMAA) in shark fins. *Marine drugs*, 10(2), pp.509-520.
- Main, B.J. and Rodgers, K.J., 2018. Assessing the combined toxicity of BMAA and its isomers 2, 4-DAB and AEG in vitro using human neuroblastoma cells. *Neurotoxicity Research*, 33(1), pp.33-42.
- Cox, P.A., 2021. BMAA, neurodegeneration, and neuroprotection. *Neurotoxicity Research*, 39(1), pp.1-5.
- Stommel, E.W., Field, N.C. and Caller, T.A., 2013. Aerosolization of cyanobacteria as a risk factor for amyotrophic lateral sclerosis. *Medical hypotheses*, 80(2), pp.142-145.
- Banack, S.A., Metcalf, J.S., Spáčil, Z., Downing, T.G., Downing, S., Long, A., Nunn, P.B. and Cox, P.A., 2011. Distinguishing the cyanobacterial neurotoxin β -N-methylamino-L-alanine (BMAA) from other diamino acids. *Toxicon*, 57(5), pp.730-738.
- Banack, S.A., Downing, T.G., Spáčil, Z., Purdie, E.L., Metcalf, J.S., Downing, S., Esterhuizen, M., Codd, G.A. and Cox, P.A., 2010. Distinguishing the cyanobacterial neurotoxin β -N-methylamino-L-alanine (BMAA) from its structural isomer 2, 4-diaminobutyric acid (2, 4-DAB). *Toxicon*, 56(6), pp.868-879.
- Cox, P.A., Richer, R., Metcalf, J.S., Banack, S.A., Codd, G.A. and Bradley, W.G., 2009. Cyanobacteria and BMAA exposure from desert dust: a possible link to sporadic ALS among Gulf War veterans. *Amyotrophic Lateral Sclerosis*, 10(sup2), pp.109-117.
- Metcalf, J.S., Chatziefthimiou, A.D., Souza, N.R. and Cox, P.A., 2021. Desert Dust as a Vector for Cyanobacterial Toxins. In *The Arabian Seas: Biodiversity, Environmental Challenges and Conservation Measures* (pp. 161-178). Springer, Cham.
- Cox, P.A., Richer, R., Metcalf, J.S., Banack, S.A., Codd, G.A. and Bradley, W.G., 2009. Cyanobacteria and BMAA exposure from desert dust: a possible link to sporadic ALS among Gulf War veterans. *Amyotrophic Lateral Sclerosis*, 10(sup2), pp.109-117.
- Cox, P.A., Kostrzewa, R.M. and Guillemin, G.J., 2018. BMAA and neurodegenerative illness. *Neurotoxicity research*, 33(1), pp.178-183.
- Li, A., Hu, Y., Song, J., Wang, S. and Deng, L., 2018. Ubiquity of the neurotoxin β -N-methylamino-L-alanine and its isomers confirmed by two different mass spectrometric methods in diverse marine mollusks. *Toxicon*, 151, pp.129-136.

Banack, S.A., Caller, T., Henegan, P., Haney, J., Murby, A., Metcalf, J.S., Powell, J., Cox, P.A. and Stommel, E., 2015. Detection of cyanotoxins, β -N-methylamino-L-alanine and microcystins, from a lake surrounded by cases of amyotrophic lateral sclerosis. *Toxins*, 7(2), pp.322-336.

Banack, S.A., Metcalf, J.S., Bradley, W.G. and Cox, P.A., 2014. Detection of cyanobacterial neurotoxin β -N-methylamino-l-alanine within shellfish in the diet of an ALS patient in Florida. *Toxicon*, 90, pp.167-173.

Cox, P.A., Davis, D.A., Mash, D.C., Metcalf, J.S. and Banack, S.A., 2016. Dietary exposure to an environmental toxin triggers neurofibrillary tangles and amyloid deposits in the brain. *Proceedings of the Royal Society B: Biological Sciences*, 283(1823), p.20152397.

Nunes-Costa, D., Magalhães, J.D., G-Fernandes, M., Cardoso, S.M. and Empadinhas, N., 2020. Microbial BMAA and the pathway for Parkinson's disease neurodegeneration. *Frontiers in Aging Neuroscience*, 12, p.26.

Schneider, T., Simpson, C., Desai, P., Tucker, M. and Lobner, D., 2020. Neurotoxicity of isomers of the environmental toxin L-BMAA. *Toxicon*, 184, pp.175-179.

Metcalf, J.S. and Codd, G.A., 2009. Cyanobacteria, neurotoxins and water resources: are there implications for human neurodegenerative disease?. *Amyotrophic lateral sclerosis*, 10(sup2), pp.74-78.

Field, N.C., Metcalf, J.S., Caller, T.A., Banack, S.A., Cox, P.A. and Stommel, E.W., 2013. Linking β -methylamino-L-alanine exposure to sporadic amyotrophic lateral sclerosis in Annapolis, MD. *Toxicon*, 70, pp.179-183.

Banack, S.A., Johnson, H.E., Cheng, R. and Cox, P.A., 2007. Production of the neurotoxin BMAA by a marine cyanobacterium. *Marine drugs*, 5(4), pp.180-196.

Brand, L.E., Pablo, J., Compton, A., Hammerschlag, N. and Mash, D.C., 2010. Cyanobacterial blooms and the occurrence of the neurotoxin, beta-N-methylamino-l-alanine (BMAA), in South Florida aquatic food webs. *Harmful algae*, 9(6), pp.620-635.

Chernoff, N., D.J. Hill, D.L. Diggs, B.D. Faison, B.M. Francis, J.R Lang, M.M. Larue, T.-T. Le, K.A. Loftin, J.N. Lugo, J.E. Schmid & W.M. Winnik (2017) A critical review of the postulated role of the non-essential amino acid, β -N-methylamino-L-alanine, in neurodegenerative disease in humans, *Journal of Toxicology and Environmental Health, Part B*, 20:4, 183-229, DOI: 10.1080/10937404.2017.1297592

Cox P.A., Banack S.A., Murch S.J.. 2003. Biomagnification of cyanobacterial neurotoxins and neurodegenerative disease among the Chamorro people of Guam. *Proc Natl Acad Sci USA* 2003;100:13380-13383.

Dunlop RA, Banack SA, Bishop SL, Metcalf JS, Murch SJ, Davis DA, Stommel EW, Karlsson O, Brittebo EB, Chatziefthimiou AD, Tan VX, Guillemin GG, Cox PA, Mash DC, Bradley WG4. Is Exposure to BMAA a Risk Factor for Neurodegenerative Diseases? A Response to a Critical Review of the BMAA Hypothesis. *Neurotoxicity Research* (2021) 39:81–106.

Parsons, M.L., Peccia, J, and Arnold W. Preliminary Report on Air Sampling of Particle-Associated Microcystins and BMAA Pilot Study in Lee County, Florida: Fall 2018 – Winter 2019.

Brain Chemistry Labs publications from research on Florida cyanobacteria

Metcalf, J.S., Banack, S.A., Wessel, R.A., Lester, M., Pim, J.G., Cassani, J.R. and Cox, P.A., 2021. Toxin analysis of freshwater cyanobacterial and marine harmful algal blooms on the west coast of Florida and implications for estuarine environments. *Neurotoxicity Research*, 39(1), pp.27-35.

Metcalf, J.S., Banack, S.A., Powell, J.T., Tym, F.J., Murch, S.J., Brand, L.E. and Cox, P.A., 2018. Public health responses to toxic cyanobacterial blooms: perspectives from the 2016 Florida event. *Water Policy*, 20(5), pp.919-932.

Banack, S.A., Metcalf, J.S., Bradley, W.G. and Cox, P.A., 2014. Detection of cyanobacterial neurotoxin β -N-methylamino-l-alanine within shellfish in the diet of an ALS patient in Florida. *Toxicon*, 90, pp.167-173.

Selected citations commenting or reporting on aerosolized toxins from HABS

Carter, H. and Haney, J., Cyanobacteria Toxins, Microcystins and BMAA, in Lake Aerosols from Lower Mill Pond and Cliff Pond, Brewster, MA.

Olson, N.E., Cooke, M.E., Shi, J.H., Birbeck, J.A., Westrick, J.A. and Ault, A.P., 2020. Harmful algal bloom toxins in aerosol generated from inland lake water. *Environmental science & technology*, 54(8), pp.4769-4780.

Wood, S.A. and Dietrich, D.R., 2011. Quantitative assessment of aerosolized cyanobacterial toxins at two New Zealand lakes. *Journal of Environmental Monitoring*, 13(6), pp.1617-1624.

Plaas, H.E. and Paerl, H.W., 2020. Toxic cyanobacteria: a growing threat to water and air quality. *Environmental science & technology*, 55(1), pp.44-64.

Heil, C.A. and Muni-Morgan, A., 2021. Florida's Harmful Algal Bloom (HAB) Problem: Escalating Risks to Human, Environmental and Economic Health with Climate Change. *Frontiers in Ecology and Evolution*, 9, p.299.

Gaston, C.J., Royer, H.M., Raymond III, J., Maizel, D., Lanpher, K.B., Solo-Gabriele, H., Brand, L.E., Zhai, R.G., Caban-Martinez, A.J. and Popendorf, K.J., 2021. Filtration Efficiency of Air Conditioner Filters and Face Masks to Limit Exposure to Aerosolized Algal Toxins. *Aerosol and Air Quality Research*, 21, pp.210016-210016.

Lad, A., Breidenbach, J.D., Su, R.C., Murray, J., Kuang, R., Mascarenhas, A., Najjar, J., Patel, S., Hegde, P., Youssef, M. and Breuler, J., 2022. As We Drink and Breathe: Adverse Health Effects of Microcystins and Other Harmful Algal Bloom Toxins in the Liver, Gut, Lungs and Beyond. *Life*, 12(3), p.418.

Caller, T.A., Doolin, J.W., Haney, J.F., Murby, A.J., West, K.G., Farrar, H.E., Ball, A., Harris, B.T. and Stommel, E.W., 2009. A cluster of amyotrophic lateral sclerosis in New Hampshire: a possible role for toxic cyanobacteria blooms. *Amyotrophic Lateral Sclerosis*, 10(sup2), pp.101-108.

Stommel, E.W., Field, N.C. and Caller, T.A., 2013. Aerosolization of cyanobacteria as a risk factor for amyotrophic lateral sclerosis. *Medical hypotheses*, 80(2), pp.142-145.

Hilborn, E.D., Roberts, V.A., Backer, L., DeConno, E., Egan, J.S., Hyde, J.B., Nicholas, D.C., Wiegert, E.J., Billing, L.M., DiOrio, M. and Mohr, M.C., 2014. Algal bloom–associated disease outbreaks among users of freshwater lakes—United States, 2009–2010. MMWR. Morbidity and mortality weekly report, 63(1), p.11.

Koreivienė, J., Anne, O., Kasperovičienė, J. and Burškytė, V., 2014. Cyanotoxin management and human health risk mitigation in recreational waters. Environmental monitoring and assessment, 186(7), pp.4443-4459.

Svirčev, Z., Drobac, D., Tokodi, N., Mijović, B., Codd, G.A. and Merilioto, J., 2017. Toxicology of microcystins with reference to cases of human intoxications and epidemiological investigations of exposures to cyanobacteria and cyanotoxins. Archives of toxicology, 91(2), pp.621-650.

Murby, A.L. & Haney, J.F. 2016. "Field and laboratory methods to monitor lake aerosols for cyanobacteria and microcystins" Aerobiologia 32: 395. <https://dx.doi.org/10.1007/s10453-015-9409-z>

Ross, C., Valigosky, M., and Akbar-Khanzadeh, F. 2017. "Industrial Hygiene Air Sampling/Analysis of Microcystin in Lake Erie Region."

http://eh.uc.edu/support_files/erc/2017/pdf/presentations/April_Ames.pdf

Sutherland J.W., Turcotte R.J., Molden E., Moriarty V., Kelly M., Aubel M., and Foss A. 2021. "The detection of airborne anatoxin-a (ATX) on glass fiber filters during a harmful algal bloom" Lake and Reservoir Management, DOI: 10.1080/10402381.2021.1881191

Viet, S., Foss, A., Tait, K., Hudgens, E., Thorne, P., Sams, E., Aubel, M., Nelson, D., Ritter, R., and Hilborn, E.. 2018. "Exposure characterization of a cyanobacteria harmful algal bloom (CHAB) at Clear Lake, CA: Data Collection Methodology" Joint Meeting ISES/ISEE, Ottawa, Ontario, CANADA, August 26 - 30, 2018. DOI:10.1289/isesissee.2018.P02.0740

Hu, Jiaming; Liu, Jiaqi; Zhu, Yi; Diaz-Perez, Zoraida; Sheridan, Michael; Royer, Haley; Leibensperger, Raymond, III; Maizel, Daniela; Brand, Larry; Popendorf, Kimberly J.; Gaston, Cassandra J.; Zhai, R. G. 2020. "Exposure to Aerosolized Algal Toxins in South Florida Increases Short- and Long-Term Health Risk in Drosophila Model of Aging" Toxins 12, no. 12: 787. <https://doi.org/10.3390/toxins12120787>

Red tide aerosolized toxins (Brevetoxins)

Cheng YS, Zhou Y, Pierce RH, Henry M, Baden DG. Characterization of Florida red tide aerosol and the temporal profile of aerosol concentration. *Toxicon*. 2010 May;55(5):922-9. doi: 10.1016/j.toxicon.2009.10.016. Epub 2009 Oct 29. PMID: 19879288; PMCID: PMC2837766.

Fleming L.E., Kirkpatrick B., Backer L.C., et al. Aerosolized red-tide toxins (brevetoxins) and asthma. *Chest*. 2007;131(1):187-194. doi:10.1378/chest.06-1830

Fleming L.E., Bean J.A., Kirkpatrick B., et al. Exposure and effect assessment of aerosolized red tide toxins (brevetoxins) and asthma. *Environ Health Perspect*. 2009;117(7):1095-1100. doi:10.1289/ehp.0900673

Fleming, L.E., Backer, L.C. and Baden, D.G., 2005. Overview of aerosolized Florida red tide toxins: exposures and effects. *Environmental Health Perspectives*, 113(5), pp.618-620.

Kirkpatrick B., Fleming L.E., Bean J.A., et al. Aerosolized Red Tide Toxins (Brevetoxins) and Asthma: Continued health effects after 1 hour beach exposure. *Harmful Algae*. 2011;10(2):138-143.
doi:10.1016/j.hal.2010.08.005

Comparative toxicity of cyanotoxins through inhalation exposure

Wood, S.A. and Dietrich, D.R., 2011. Quantitative assessment of aerosolized cyanobacterial toxins at two New Zealand lakes. *Journal of Environmental Monitoring*, 13(6), pp.1617-1624.

Selected press references from southwest Florida

Williams, A. B. What's wrong with the water around Pine Island? Groups try to find out as people get sick, move. *Fort Myers News-Press*, June 25, 2021.

Williams, A. B. Concerned about cyanobacteria exposure? You can help researchers learn more about health risks. *Fort Myers News-Press*, March 11, 2022.

LeBlanc, P. Possible toxic algae poisoning diagnosis on Matlacha. *Pine Island Eagle*, July 14, 2021.

Bradley, W., and Simon H.. 2020. Florida's harmful algal blooms are dangerous to humans | Opinion. *Florida Today*, January 29, 2020.