

Human Brain Evidence Links Cyanobacterial Neurotoxin BMAA To Neurodegenerative Disease

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Abstract

The neurotoxic amino acid β -N-methylamino-L-alanine (BMAA) is produced by cyanobacteria found in a variety of freshwater, marine, and terrestrial habitats. We have measured BMAA in neuroproteins from postmortem brain tissue of patients from the United States who died with Amyotrophic Lateral Sclerosis (ALS), Alzheimer and Parkinson diseases. Evidence of BMAA in the brain of North American ALS and AD patients suggests the possibility of a gene/environment interaction. The possibility of geographically broad human exposure to BMAA is supported by our studies which demonstrate BMAA in the marine food web, a potential source of neurotoxin exposure throughout the lifespan.

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