The Selenoproteome Influences Vulnerability to Environmental Methylmercury: The Potential Perspectives in Relation to Human Diseases

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A) Purpose of Experiment: Most people understand that mercury inhibits certain enzymes which are essential for health in virtually all organisms. The mechanisms on how it is studied is not very well known and understanding how certain inorganic's such as selenium can prevent mercury toxicity. The research may help provide certain correlations to diseases such as AIDS and how it is important to have selenium. B) Procedure: The research hypothesis was to look at organisms (crickets) that do have selenoenzymes versus organisms (beetles) that don't have selenoenzymes. To test the hypothesis 270 beetles and crickets were placed into 9 dietary treatment groups each containing low, moderate, and high amounts of mercury and selenium. The individual weight of each cricket and beetle was recorded and analyzed. The data was graphed in Microsoft Excel. C) Data: The data collected from crickets showed signs of impaired growth when exposed to high amounts of mercury with low amounts of selenium. The data also showed that high amounts of mercury exposed to high amounts of crickets had negligible growth affects. Beetles when exposed to high amounts of mercury and selenium and no significant change in growth. The data gathered goes along with the original hypothesis. D) Conclusion: The research gathered from the data helped come up with research which can be used in future studies to tie in the importance of selenium in understanding mercury poisoning. It also gave background to animals that don't have selenium and why they don't require it. The study can also help create possible conjectures in understanding how certain diseases interact with selenium which could help find novel cures in the future.

Awards Won:
Fourth Award of $500