Abstract

The experiment was designed to determine the amount of ATP present in samples of *Daphnia magna* tissues at various times in the first hour of the postmortem interval (PMI). Colorimetric assays were run of freshly prepared, lysed, and deproteinized samples at 10, 20, 30, 45, and 60 minutes after the time of death by asphyxiation. Samples were prepared by drying and asphyxiating *Daphnia magna* in paper towels and measuring out .010 grams of dried tissues which were then ground with a mortar and pestle, mixed with 100 μL of ATP buffer, and deproteinized in a miniature centrifuge. From the deproteinized solution, 15 μL were extracted, containing the ATP from approximately 1.5mg of tissues, and 35 μL of ATP buffer was added. The resulting sample solution was then mixed with 50 μL of reaction mix and allowed to incubate for 24 hours at room temperature, protected from the dark, after which they were diluted 10 times with diluted water and scanned with a spectrometer and compared to a similarly prepared standard curve of known amounts of ATP and their corresponding absorbances. The 10-minute assay was found to have 14.55 mmol of ATP, the 20-minute assay contained 14.86 mmol, the 30-minute assay had 11.76 mmol ATP, the 45-minute assay had 12.21 mmol of ATP, and the 60-minute assay contained 12.34 mmol ATP.