

Nathan Frantz

A Study of Dietary Supplements and Actin and Myosin Production

“A Study of Dietary Supplements and Actin and Myosin Production” looks at how dietary supplements effect Actin and Myosin production in muscle cells. The data was collected by DC-protein assays and electrophoresis gels. Crayfish were purchased as the test animal and banded. They were then fed three different combinations of dietary supplements, creatine, amino acids plus electrolytes, and creatine plus electrolytes. Legs were amputated from the crayfish and were frozen for further testing. A leg was amputated from each crayfish once a week. After 21 days the legs that had been amputated were dissected to retrieve muscle tissue. This was massed, and protein was extracted from the tissue. Tests were done to determine protein content and estimated Actin and Myosin Content. As the period of ingestion and digestion of the dietary supplements increased, the mass extracted from the legs of the crayfish increased, however the content of protein (measured in μg) decreased significantly. All values returned for protein content were statistically significant with a 95% confidence interval. The largest value returned from a T-test on these values was 0.040186. The amount of estimated Actin and Myosin did not show very much indication of change with the largest change being .36%. This data does not support the hypothesis. However, it does substantiate previous research suggesting that the increased muscle mass is due to cellular hydration. This data is important in that it lends information on how to increase the body weight of a person or an animal relatively easily.