

## **Proteomical Evaluation of Acute Exercise on Heart Tissue Proteins of Wistar Rats**

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Physical activity is known to promote stress response and biological adaptation. This adaptation on cardiac myocit indicates resistance to physical stress and cardiovascular improvement. In order to verify the acute responses at molecular levels of one session of moderate and intense exercise, 15 male Wistar rats with 8 (+/-1) weeks, were submitted to 30 min of intense or moderate swimming exercise. Animals were distributed into 3 groups: control (C, n=3), moderate exercise (ME, n=6) and intense exercise (IE, n=6) group. The moderate and intense exercises were performed by 30' of swimming with 5 or 10% of overload. Left ventricular fragment of each rat was excised, liquid N<sub>2</sub> frozen and stored at -80 °C. Tissues were homogenized and protein contents were evaluated by the Bradford method. SDS-PAGE indicated that proteins of approximately 70 kDa were over expressed on the moderate exercise group compared to the control group. Samples were analyzed by uni- and bidimensional gels, with strips of 3-11 pl range. All gels were analyzed in duplicate by Bionumerics software, showing differential, up and down regulated protein spots. 176 spots were resolved on at least one of the three groups. Furthermore 36 spots showed a linear up regulation on the moderate and intense exercise groups, when compared to control group. 11 spots showed a linear down regulation compared to the control group. In summary, it was verified that one session of moderate and intense exercise was able to promote proteins expression modification, indicating a possible biological adaptation by cardiovascular system to aerobic exercise.