INDUKSI BIOGENESIS MITOKONDRIA ANTARA PELARI JARAK JAUH DAN CEPAT

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ABSTRACT

Abstracts

It is well known that various types of exercise can provide a powerful stimulus for mitochondrial biogenesis. However, there are conflicting findings in the literature, and a consensus has not been reached regarding the benefits of aerobic (long distance running) and anaerobic (short distance/explosive) exercise for promoting mitochondrial biogenesis in humans. The aim of this research is to examine the differences in induction of mitochondrial biogenesis between aerobic and anaerobic exercise in trained athletes and this can later be used as input and progress in sports and health science in Indonesia.Skeletal muscle occupies approximately 40% of body mass, is the largest organ in the body, and has great plasticity in its response to physiological stressors and subsequent changes in the contractile and metabolic properties of muscle.

Therefore, the health status of muscles affects the health status of the whole body. Mitochondria are found in many human muscle cells and are known as cell power plants to produce adenosine triphosphate (ATP) and oxygen. Exercise is known as a major strategy to induce mitochondrial biogenesis and upregulation of mitochondrial function. The results of several studies on the induction of mitochondrial biogenesis are still limited, especially in relation to aerobic types of exercise, namely long-distance running and anaerobic sports, namely short-distance running or explosive sports.

This research used a survey method, the population used in the research was taken from athletes who had been trained for both aerobic (long distance) and anaerobic (short distance) sports. The number of samples that will be used is 20 people (10 long distance athletes and 10 short distance athletes). Each sample will be taken twice as much as 5 cc of blood, then processed in the molecular biology laboratory at the University of Indonesia. The data obtained will be analyzed using the t test to see the induction of mitochondrial biogenesis between aerobic (long distance) and anaerobic (short distance) exercise.

Kata Kunci: *Mitokondria; Biogenesis; Induksi; Implikasi; Latihan*