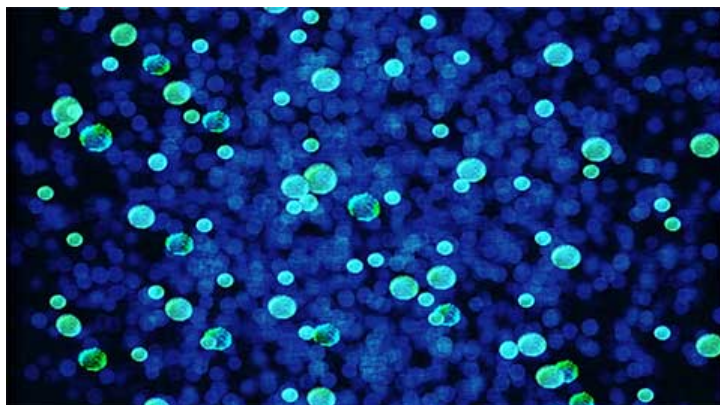


# Bacteria Glowing Enzymes Help Determine the Level of Training Load in Athletes

Researchers at Siberian Federal University have developed a new method for the rapid assessment of athletes' physical activity with the help of their saliva composition. In future, the method will help develop portable self-monitoring devices for professional athletes and sports fans.



Unlike other developments in this area, where, for example, electrodes were used to analyze the composition of saliva for the presence of lactate, one of the metabolic products containing data on the state of a person, the authors of the work proposed to measure the stress level of athletes using the enzymes of luminous bacteria - luciferase and oxidoreductase. The new method also allows detection of a wider range of metabolites in saliva.

*„We have created a way to quickly determine such physiological indicator of athletes as the level of stress that occurs during physical and emotional overload. By tracking the stress levels using special enzymes, we can prevent any deterioration in a general state while maintaining the effectiveness of training. The biological fluid we analyse is saliva,“ explained the scientists of the Laboratory of Bioluminescent Biotechnology of Siberian Federal University. „When a person is under stress, the chemical composition of their saliva changes, and special stress markers, the so-called stress metabolites like calcium and sodium ions, lactate and others, appear in it. These components of saliva alter the activity of luminescent enzymes, which allows us to use them as a litmus test to determine the level of stress during physical exertion.“*

The journalists of the TASS Science wrote about this new method.

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