Oxilium : Olfactory Examination Procedure of Detecting Cancer Cells Based on the Smell of Honey Bees

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The World Health Organization states that cancer is the second leading cause of death in the world. In 2018, an estimated 9.5 million people died because of that disease. The Oxilium Device System allows for quick and non-invasive screening for the presence of cancer cells in the human body. Due to the global coronavirus pandemic, research has been carried out using poultry meat instead of actual cancer cells. According to previous researches, the volatile compounds of both tissues allow for such a change. Therefore, a research question was posed: is it possible to condition the bees to the smell of poultry meat and detect trace amounts of this smell using the Oxilium Device System? The equipment consists of a conditioning module, a test module, and a compression chamber. Conditioning consists of dosing the bee with the right amount of sugar while stimulating the sense of smell with a given marker. In this way, the bee identifies a particular odor with the received food, resulting in involuntary tongue extension. The test module aims to record the number of uvula protrusions by bees. All results were obtained from the graph of the dependence of the photoresistor readings against time. The average agreement obtained from five measurements of the detection of the smell of poultry meat is 88±20%. The obtained result proofs the effectiveness of the Oxilium Device System and confirmed the hypothesis that if the bees are conditioned to the smell of poultry meat, it will be possible to detect trace amounts of this smell.

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