



CERTIFICATE
about accepting the manuscript for publication
in "Regulatory Mechanisms in Biosystems"

Abstract

Ibuprofen is one of the nonsteroidal inflammatory medications which can reduce the body's natural defense against harmful substances and increase stress on the body's cells and tissues. This research was conducted to explore the impact of using ibuprofen and its potential effects on taste perception in rats by examining changes in the structure of taste buds or biochemical functions through histological and biochemical analysis. In the experiment 15 rats were divided into three groups: the control group, the low-dose group receiving 150 mg/kg of ibuprofen, and the high-dose group receiving 300 mg/kg for two weeks. Upon examination, under a microscope we found that rats taking ibuprofen developed parakeratosis (thickening of tissue layer) a decrease in taste buds and thickening of mucosa along with the presence of cells beneath the tissue layer. The results from the analysis showed oxidative stress in the high dose group as indicated by reduced levels of glutathione and increased malondialdehyde (MDA) compared to both the control and low dose groups. These findings suggest that extended or high doses of ibuprofen could potentially harm the structure and function of tongue tissue. A dosage of 300 mg/kg of ibuprofen seemed to cause reactions related to stress that disrupted the balance of antioxidants in the body; this was evidenced by a decrease in glutathione levels and an increase in MDA levels. On the other hand, the dosage of 150 mg/kg did not bring about changes in these markers of oxidative stress, implying that the body may have the ability to adjust to moderate levels of ibuprofen induced oxidative stress without notable biochemical or structural alterations. In general, these findings suggest that prolonged use of ibuprofen at high doses could harm the structure and function of tongue tissue, potentially resulting in issues with taste perception.