

**ABSTRACT**

**Taste Buds Biological Bitter Mechanism Change  
Caused By Inflammation At Mouse  
(Rattus Novergicus) Strain Wistar**

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Homeostatic changes in the body, such as fever caused inflammation, which impact a sense of bitterness inside mouth. It implies in the reduction of appetite, which may finally result in the reduction of physical condition due to inadequacy of food intake. It causes the inhibition of healing process, which reduces working productivity. The objective of this study was to identify the mechanism of bitterness due inflammation, as proved locally in the taste buds of Wistar rats. This study was carried out experimentally using post-only control design in experimental animals of male *Rattus norvegicus*, Wistar strain. The animals were divided into two groups. First group as control, while the second group received treatment with *Salmonella typhimurium* 0.5 ml/kgBW. Blood sample and tongue incision were taken from the animals. Neutrophyl was counted, and tongue incision was used for and immunohistochemical staining for the variables gustducin,  $IP_3$  and  $Ca^{2+}_{ic}$ .

Data were analyzed using Kolmogorov-Smirnov test for data normality, and Comparative test. The discriminant analysis was also done to find the discriminant variable. From the result, it was found that there was an increase of biological response of signaling transduction of bitterness in taste buds, as indicated from the increase of these variables, gustducin,  $IP_3$ , and  $Ca^{2+}_{ic}$  in treatment group or in inflammatory fever condition as compared to control group ( $p < 0.05$ ). By unfolding its mechanism, further studies can be recommended to find the way to inhibit this sense of bitterness. The results are intended to overcome homeostatic disorder in the body to prevent loss of appetite, so that physical endurance can be maintained.

**Keywords:** inflammation, taste buds, gustducin,  $IP_3$ , and  $Ca^{2+}_{ic}$