Abstract

In general, the substances that are not palatable to an organism are those that are most important to its survival. By counting the number of licks a tastant elicits in a short exposure trial, the palatability of that tastant to rats can be determined without interference from gut feedback regarding calories or satiety. The issue of palatability is particularly relevant regarding the noted hyperphagic effects of benzodiazepines. Through research into this effect, benzodiazepines have become an important pharmacological tool for understanding the role of GABA in ingestive behavior. The current study therefore examined the effects of the benzodiazepine chlordiazepoxide (CDP) on the palatability of four tastants: sucrose, glucose, sucralose, and a mixture of both glucose and sucralose (G+S). Ip CDP was tested for its effect on palatability in brief-access and long-term microstructure analysis of licking by rats. Rats were classified as sucralose preferers (SP) and avoiders (SA) and the effect of CDP on licking based on preference was analyzed as well. It was hypothesized that CDP would increase the palatability of glucose and sucrose in all rats. Furthermore, CDP was expected to increase the palatability of sucralose in SP and SA, as demonstrated by increased intake following CDP administration. Ultimately, it was concluded that CDP does increase palatability of sucrose regardless of concentration. CDP was also found to increase the palatability of glucose. The sum of this research on the role of GABA in the PBN indicates just one complex mechanism in the neuroscience of taste.