

Aversive effect of tannic acid on drinking behavior in mice of an inbred strain: Potential animal model for assessing astringency

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Astringency, an orosensory sensation associated with dietary tannins, contributes to food appetitiveness/aversiveness. However, astringency perception varies greatly among individuals. This study examined whether genetically homogeneous naïve mice display appetitiveness/aversiveness when provided with tannin-containing drink solutions. Ingestion of serial dilutions of tannic acid (TA) by inbred mice (A/Snell) was assessed by a one-bottle preference test. Drink intake was far predominant at night (circadian rhythm). TA concentration-dependently inhibited daily drink consumption. Overnight consumption of TA solutions (range = 0.5-8 g/L) decreased linearly to zero during the first night and was recovered significantly during subsequent nights. TA also inhibited drink consumption in another two inbred mouse strains. The protein fraction of saliva collected from naïve mice was markedly reactive with TA at the concentrations shown to affect drink consumption. Thus, testing for drink ingestio