The rise in diabetes and metabolic syndrome, often linked to obesity caused by urbanization, lifestyle changes, and high-fat diets, has increased the use of low-calorie artificial sweeteners (NNS) like saccharine, aspartame, sucralose, and stevia. These NNS, approved by the US FDA within acceptable daily intake limits, are common in beverages and diet products and are readily available in the Indian .market. This study utilizes these four commonly available sweeteners