

**SPECTROPHOTOMETRIC ANALYSIS OF SACCHARIN IN INSTANT  
TEA PRODUCTS**

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## ABSTRACT

### SPECTROPHOTOMETRIC ANALYSIS OF SACCHARIN IN INSTANT TEA PRODUCTS

Saccharin is one of the most well-known artificial sweeteners that widely used since a long time ago. Saccharin is commonly used as sweeteners to replace sugar in foods and beverages as it is 300-400 times sweeter than sugar. The presence of saccharin that exceeds the permitted level of 80 mg L<sup>-1</sup> for soft drinks from plant extracts will cause severe health effect to the consumers. Hence, the amount of saccharin in beverages products must be analyzed. A sensitive, accurate, simple, rapid and low cost analytical method is required for the determination of saccharin. The spectrophotometric method has been proposed for the quantitative analysis of saccharin. The calibration curve was linear from 2 mg L<sup>-1</sup> to 9 mg L<sup>-1</sup> of saccharin standard solution with a regression coefficient (R<sup>2</sup>) of 0.9997. The limit of detection (LOD) obtained was 0.25 mg L<sup>-1</sup>. The precisions in terms of relative standard deviation (RSD) were 2.69 %, 2.64 % and 0.74 % for 2 mg L<sup>-1</sup> saccharin in consecutive three days. Meanwhile, the RSD were 0.46 %, 0.31 % and 0.30 % for 4 mg L<sup>-1</sup>. Lastly for concentration of 8 mg L<sup>-1</sup>, the RSD were 0.08 %, 0.33 % and 0.08 %. The range of recovery achieved for 2, 5 and 8 mg L<sup>-1</sup> of saccharin standard solution in the instant tea products were 89.17 %, 96.99 % and 101.55 % respectively. All tested instant tea products contain no saccharin except for instant tea powder (A2) which 4.24 mg L<sup>-1</sup>. So, it can be concluded that this proposed method is accurate, simple, fast, low cost and has a potential to be an alternative method for routine analysis of saccharin in instant tea products.