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A comparative analysis of aspirin from various analgesic formulations using titrimetry, spectroscopic and hyphenated chromatographic techniques

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Aspirin, acetyl salicylic acid or 2-acetoxybenzoic acid has the carboxylic acid functional group hence easier to quantify using a strong alkali like NaOH. In most analgesic drug formulations in tablets, aspirin generally binds with other excipients or substituents which has acidic groups and easily reacts with NaOH, hence making sodium hydroxide not a suitable reagent for quantifying aspirin in analgesic tablet formulation. Six different tablets containing aspirin as active substance were taken. Methods using sodium hydroxide as the main reagent in quantification involves a lot of stoichiometric mathematical manipulations as in titrimetric, UV spectroscopy via multivariate calibration gave values at lower limit or outside the lower US & BP pharmacopeia limit while the hyphenated chromatographic techniques such as, GC-MS and HPLC gave a very good resolution and very precise results within the pharmacopeia limits.

Biography

Ochieng Anthony studied pure and applied chemistry, a PhD scholar and is currently a Senior Chemistry Lecturer at Faculty of Science, Sumait University in Tanzania. He is also a co-author of determinations of acidic pharmaceutical components in analgesic drugs using wet classical techniques. His current researches focuses on natural products and evaluating their medicinal values, pharmaceutical analysis, cosmetology, Macrocyclic compounds and their applications in drug targeting, and using statistical thermodynamics in evaluating physical constants. He is a member of Kenya Chemical society, American Chemical Society, GNDU & I Chemical Society, Royal Chemical Society, a Reviewer with Journal of chemical a material science and has over 15 years lecturing Chemistry in various higher academic institution and seven years working in managerial technical positions in pharmaceutical (Lab & Allied, Cosmos Pharm, Ranabaxy), Textiles (OCM) and cosmetics (Interconsumer Ltd) industrial sectors.

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