

Estimation of Paracetamol in Tablets Formulation by Spectro Analytical Methods †

Manoj Kumar ^{1,2}, Sushma ¹, Subhalaxmi Pradhan ^{1,*}, Chandreyee Saha ¹

¹ Department of Basic Sciences, School of Basic and Applied Sciences, Galgotias University, Greater Noida, UP, India;

² Sigma Test and Research Centre, Badli Industrial Area, New Delhi;

* Correspondence: subhalaxmi.pradhan@galgotiasuniversity.edu.in (S.P.);

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Abstract: Paracetamol [N-(4-Hydroxy Phenyl Acetamide)] is used as an antipyretic and analgesic drug that cures headaches, fever, and other types of pains such as joint pain, migraine, headache. UV, IR, NMR, and reversed-phase high-performance liquid chromatography (RP-HPLC) are the most regularly utilized analytical procedures in drug research. In addition, RP-HPLC operations use a lot of organic solvents and produce a lot of waste, which is harmful to the environment and terrible for the operators' health. Micellar Liquid Chromatography (MLC) is a green chromatographic method for pharmaceutical analysis in which surfactants are used in the mobile phase above the Critical Micellar Concentration (CMC). A simple, accurate, and rapid method has been developed and validated to determine Paracetamol in Tablet of different brands by using Micellar Liquid Chromatography. The chromatographic condition was C₁₈ reverse-phase column (150 mm x 4.6 mm), 5µm using a mixture of 0.06 M SDS and 3% IPA, pH 3.7 maintained by ortho Phosphoric acid as mobile phase with a flow rate of 1ml/min. The detection was carried at 245nm at ambient temperature. The retention time was 3.2 minutes. The percentage content of the analyzed sample was 95% to 105%. The obtained results show that the percentages in various formulas are within the Indian Pharmacopeia's limits. Aside from that, the approach was simple to apply, economical, environmentally benign, safe, and can be employed for routine analysis.

Keywords: RP-HPLC; paracetamol; micellar liquid chromatography; critical micellar concentration; SDS.

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Conflicts of Interest

The authors declare no conflict of interest.