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Editor's Note: Journal of Chromatography and Separation Techniques

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Editor's Note

Separation technique is a central analytical tool for chemical, pharmaceutical industries and testing labs. The techniques are used in food regulation, doping tests, forensics and quality control. The Journal of Chromatography & Separation Techniques shares latest research outcomes in this field. The current issue presents articles pertaining to identification of antibodies, partitioning of proteinase inhibitors, estimation of fungicides and active pharma ingredients and heavy metal adsorption. Sheraz et al. [1] have employed ammonium sulfate fractionation-isolation, gel filtration chromatography-based purification and biochemical characterization (involving physicochemical, structural, kinetic and immunological characteristics) of cystatin-like thiol proteinase inhibitor from chickpea. The functional attributes were found to be resembling other phytocystatins and may protect inappropriate proteolysis during seed germination. Terbinafine hydrochloride (TRH) or (E)-N-(6,6-dimethyl-2-hepten-4-ynyl)-N-methyl-1-naphthalenemethanamine hydrochloride is an allylamine derivative having broad spectrum antifungal activity. TRH is orally administered for the treatment of fungal diseases. Belal et al. [2] separated TRH using micellar liquid chromatography with cyonopropyl-bonded stationary phase and a mixture of Sodium Dodecyl Sulphate (SDS), Triethylamine (TEA), using n-propanol in orthophosphoric acid as the mobile phase and detected TRH by fluorescence intensity. The method can be applied for analysis of other dosage forms (tablets, spray, cream and gel formulations). Glyk et al. [3] evaluated the feasibility of several Polyethylene Glycol (PEG)-salt Aqueous Two-Phase Systems (ATPS) for partitioning of different model proteins (bovine serum albumin, α-chymotrypsin, lysozyme, and ovalbumin) and optimized the partitioning behavior of each model protein. Protein partitioning was found to be influenced by hydrophobic and electrostatic interactions as well as surface properties of proteins. This study is useful for designing an extraction process with relatively high protein recovery and selectivity. Menthol and Methyl Salicylate are active ingredients in topical creams and gels which are useful in dilation of blood vessels, re-oxygenation of tissues and muscle relaxation. Subhash et al. [4] determined Menthol and Methyl Salicylate in formulations by gas chromatography as per International Conference on Harmonization (ICH) guidelines using DB-624 column and Helium as a mobile phase with linearity (R^2) of 0.99, relative standard deviation of <3% and recovery of 100%. Heavy metal remediation is an effective strategy for environmental sustainability. Hexavalent chromium (Cr^{6+}) in tannery and electroplating industry effluents may contaminate water resources leading to environmental problems. In this context, Yogeshwaran and Priya [5] have reviewed the application of various cost-effective natural adsorbents such as coconut shell, saw dust, agricultural waste, neem leaves, banana peels, bamboo waste, ground nut hull etc., for the removal of hexavalent chromium (Cr^{6+}) from industrial effluents and observed that saw dust due to high carbon content is the best adsorbent with 99.9% efficiency.

References

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