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Optimized ionic liquid-based microwave assisted extraction of piperine from Indian Ayurvedic plant *Piper nigrum***Chanchal Garg, Meenu Bhan and Munish Garg**
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An optimized ionic liquid-based microwave assisted extraction (IL-MAE) method was developed for piperine from *Piper nigrum* using ionic liquid, 1-butyl-3-methyl-imidazolium chloride ([bmim]Cl) by response surface methodology. Variable microwave-assisted extraction parameters were selected as concentration of [bmim]Cl, extraction time and microwave power while solid-liquid ratio and extraction temperature were kept constant. Response surface methodology was applied for developing, improving and optimizing the process. A multivariate quadratic regression equation was obtained by central composite design. The 3D response surface curve and contour plots were obtained by variance of analysis (ANOVA). HPTLC was performed for quantitative and comparative analysis of piperine for IL-MAE with conventional methods. The optimum extraction conditions were 3.0 mol/L, microwave power 700 W, extraction time 9 min, extraction temperature 70 °C, solid-liquid ratio 1:10. With this novel IL-MAE method, the yield of piperine is increased from 1.8% w/w in 7 days (maceration) and 2.03% in 3 hours (soxhlation) to 4.71% in 9 minutes (IL-MAE). Meanwhile, there was great reduction in the environmental pollution by using the green solvents/ionic liquids (ILs), which is a great benefit to all.

Biography

Chanchal Garg completed masters at MDU Rohtak (Maharshi Dayanand University) in Harayana and presently she is working as Faculty of Pharmacy, in the Department of Pharmaceutical Sciences, Maharshi Dayanand University, India.

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