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**Salicylic acid assisted cloud point extraction at room temperature: application for  
preconcentration and spectrophotometric determination of molybdenum(VI)**

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**Abstract.** In this study, a novel and rapid procedure for the salicylic acid assisted cloud point extraction of molybdenum(VI) is presented. Preconcentration of the substrate has been suggested prior to its spectrophotometric determination method. The method involves the complexation of Mo(VI) with 6,7-dihydroxy-4-methyl-2-phenylbenzoryrylium chloride (DHMPbB), followed by extraction of the complex into micellar phase of Triton X-100. The cloud point phenomenon at room temperature was activated by formation of salicylic acid. This reaction prevents the formation of hydrogen bonds between surfactant and water molecules and causes immediate formation (<1 min) of the surfactant-rich phase. The calibration curve for Mo(VI) was obtained in the concentration range of 0.16-1.8  $\mu\text{g mL}^{-1}$  under optimized conditions (pH 2;  $1 \cdot 10^{-4}$  M DHMPbB; 0.1 M NaSal; 0.05 M  $\text{H}_2\text{SO}_4$  and 1% (v/v) Triton X-100). The limit of detection is 0.05  $\mu\text{g mL}^{-1}$ . The method was successfully used to determine trace quantities of Mo(VI) in water samples, the rose hips and pharmaceuticals with favorable results.

**Keywords:** salicylic acid assisted cloud point extraction; room temperature cloud point extraction; molybdenum(VI) preconcentration; water analysis; spectrophotometry.

## 1. Introduction.

Cloud point extraction (CPE) is based on the clouding phenomena of nonionic surfactants. That attracted our precise attention as preconcentration and separation technique. It is well known that CPE has a lot of advantages over classical liquid-liquid extraction. CPE provides possibility to extract hydrophobic and hydrophilic substrates and to achieve high enrichment factors [1]. CPE

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