

# Simultaneous determination of Cu(II) and Ag(I) on SP sephadex C25 as complexes with 1-phenyl-1,2-propanedione-2-oximethiosemicarbazone by derivative spectrophotometry

Morales, Libby

Toral, M. Inés

A simple, rapid, and sensitive method has been developed for the simultaneous determination of trace amounts of copper and silver using 1-phenyl-1,2-propanedione-2-oximethiosemicarbazone (PPDOT) as a chromogenic reagent. The proposed method was based on retention and preconcentration of the complexes Cu(II)-PPDOT and Ag(I)-PPDOT on a solid phase in acid medium. The complexes were quantitatively retained in the cation exchanger SP Sephadex C25, and the analytical measurements were executed directly in the solid phase by derivative spectrophotometry. In this simultaneous determination, the second derivative and the zero crossing method were used. The determination of copper and silver was carried out to 321.0 and 427.0 nm, respectively. In order to obtain quantitative recoveries of the metal ions, various experimental analytical parameters, such as pH, stirring time, volume, and amount of solid phase, were optimized. The effect of interfering ions on the determination was described. The r