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Tečno-hromatografsko ispitivanje mogućnosti uklanjanja komercijalne formulacije tiakloprida primenom magnetitom modifikovanih višezidnih ugljeničnih nanocevi

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Ispitivana je mogućnost uklanjanja tiakloprida (TIA) početne koncentracije 2,0 μg mL^{-1} iz rastvora komercijalne formulacije Calypso SC 480 primenom višezidnih ugljeničnih nanocevi modifikovanih sa 2,5 % i 10 % magnetita suspendovanih u vodenoj sredini. Ispitan je i uticaj različitih koncentracija H_2O_2 (21,8 i 43,5 μg mL^{-1}) na efikasnost uklanjanja TIA u pomenutim sistemima. U toku 40 min kontaktnog vremena, za praćenje koncentracije ciljnog analita primenjena je HPLC-DAD tehnika. Oba nanokompozitna materijala su se pokazala kao efikasni adsorbensi, pri čemu dodatkom H_2O_2 može se smatrati da je TIA potpuno uklonjen iz sistema u toku prvih 5 min kontaktnog vremena. Takođe, dobijeni rezultati ukazuju da se pored adsorpcije odigrava i proces degradacije TIA.

Liquid chromatographic investigation of possibility of thiacloprid commercial formulation removal by magnetite modified multiwalled carbon nanotubes

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The possibility of thiacloprid (TIA) removal of the initial concentration 2.0 μg mL^{-1} from the solution of the commercial formulation Calypso SC 480 by multiwalled carbon nanotubes modified with 2.5 % and 10 % magnetite suspended in an aqueous media was investigated. The influence of different concentrations of H_2O_2 (21.8 and 43.5 μg mL^{-1}) on the efficiency of TIA removal in these systems was examined. During the 40 min contact time, the HPLC-DAD technique was used for monitoring the target analyte concentration. Both nanocomposite materials have been shown to be effective adsorbents, while with the addition of H_2O_2, it can be considered that the TIA is completely removed from the system during the first 5 min of the contact time. Also, the obtained results indicate that in addition to adsorption, the process of degradation of TIA takes place.

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