**Separation and determination of phthalate esters in milk using Chitosan grafted Polyaniline in**  
**dispersive solid phase extraction coupled with high-performance liquid chromatography**  
Ali Sarafraz Yazdi\*,1, Nourolhoda Razavi  
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Department of Chemistry, Faculty of Sciences, Ferdowsi University of Mashhad, Iran  
E-mail address: asyazdi@ferdowsi.um.ac.ir  
**Abstract**  
In this study, the chitosan grafted polyaniline (Ch-g-PANi) were synthesized and applied as a sorbent  
for preconcentration of phthalate esters (PAEs) in dispersive solid phase extraction (d-SPE). By  
coupling d-SPE with HPLC and response surface methodology (central composite design), a reliable,  
sensitive and cost-effective method for simultaneous determination of PAEs including dimethyl  
phthalate (DMP), di-n-butyl phthalate (DBP), and di(2-ethylhexyl)phthalate (DEHP) was developed.  
The morphology of sorbent had been studied by SEM and its chemical structure confirmed by FT-IR.  
Under optimum condition, good linearity was observed in the range of 5.0–5000.0 ngmL-1. The limits  
of detection (S/N= 3) and limits of quantification (S/N = 10) were in the range of 0.1-0.3 ng mL-1and  
0.3–0.5 ngmL-1, respectively. The relative standard deviations (RSD%) were less than 8.8%. Finally,  
this procedure was employed for extraction of trace amounts of PAEs in milk samples, the relative  
recoveries ranged from 82 to 103 %.  
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