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**A fast and simple air-assisted liquid-liquid microextraction procedure for the simultaneous determination of bisphenols, parabens, benzophenones, triclosan, and triclocarban in human urine by liquid chromatography-tandem mass spectrometry**

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**Abstract**

The increasing awareness and public concern with hazard exposure to endocrine-disrupting chemicals calls for methods capable to handle numerous samples in short analysis time. In this present study, a novel method combining air-assisted liquid-liquid microextraction and liquid chromatography coupled to mass spectrometry was developed and validated for the extraction, preconcentration, and determination of 7 bisphenols (bisphenol A, bisphenol S, bisphenol AP, bisphenol P, bisphenol F, bisphenol AF, bisphenol Z), 7 parabens (methyl-, ethyl-, propyl-, butyl-, benzyl-paraben, methyl-protocatechuic acid, and ethyl-protocatechuic acid), 5 benzophenones (benzophenone-1, benzophenone-2, benzophenone-3, benzophenone-8, and 4-hydroxybenzophenone), and two antimicrobials (triclosan and triclocarban) in human

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