

# Die ontleding van endokrienontwrigtende chemikalieë in water met behulp van sorptiewe ekstraksie, GC×GC-TOFMS en UPLC-MS/MS

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**How to cite this article:**

Wooding, M., Aneck-Hahn, N., Bornman, R., Rohwer, E. & Naudé, Y., 2016, 'Die ontleding van endokrienontwrigtende chemikalieë in water met behulp van sorptiewe ekstraksie, GC×GC-TOFMS en UPLC-MS/MS', *Suid-Afrikaanse Tydskrif vir Natuurwetenskap en Tegnologie* 35(1), a1416. <http://dx.doi.org/10.4102/satnt.v35i1.1416>

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**Analysis of endocrine disrupting chemicals in water by sorptive extraction, GC×GC-TOFMS and UPLC-MS/MS.** In this study, methods have been developed to detect endocrine disrupting chemicals in surface and drinking water. Pollutants were concentrated from water, using sorptive extraction, followed by analysis with comprehensive gas chromatography – time-of-flight mass spectrometry (GC×GC-TOFMS) and ultraperformance liquid chromatography tandem mass spectrometry (UPLC-MS/MS).

Navorsing wat die afgelope paar jaar aan die Universiteit van Pretoria gedoen is, dui daarop dat die vlak van endokrienontwrigtende chemikalieë (EOC [EDCs]) in die omgewing en in wilde diere in Suid-Afrika dieselfde of selfs hoër is as die vlak van EOC in ander lande (Aneck-Hahn *et al.* 2015). Veral watersisteme is kwesbaar omdat groot hoeveelhede EOC en hul afbraakprodukte uiteindelik in dié sisteme beland (Aneck-Hahn *et al.* 2007). Daar is 'n behoefte aan epidemiologiese data, asook die skep van publieke bewustheid, aangesien EOC-besoedeling in Suid-Afrika meer algemeen blyk te wees as wat aanvanklik gedink is (Aneck-Hahn *et al.* 2015). Die ontleding van EOC in komplekse omgewingsmatrikse is 'n uitdaging omdat dié verbindings teen ultraspoorvlakke voorkom (Comerton, Andrews & Bagley 2009). Tydens hierdie studie is analitiese metodes ontwikkel om farmaseutiese verbindings en plaagdoders op te spoor in oppervlak- en drinkwater met 'n spesifieke fokus op verbindings met 'n potensiële endokrienontwrigtende aktiwiteit. Oplosmiddelvrye sorptiewe ekstraksie is gebruik vir die konsentrering van besoedelende stowwe uit water, gevolg deur 'n ontleding met behulp van omvattende gaschromatografie-vlugtydmassaspektrometrie (GC×GC-TOFMS) en ultraverigting-vloeistofchromatografie-tandemmassaspektrometrie (UPLC-MS/MS).

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**Note:** A selection of conference proceedings: Student Symposium in Science, 29–30 October 2015, University of the Free State, South Africa. Organising committee: Mr Rudi Pretorius and Ms Andrea Lombard (Department of Geography, University of South Africa); Dr Hertzog Bisset (South African Nuclear Energy Corporation (NECSA); Dr Ernie Langner and Prof Jeanet Conradie (Department of Chemistry, University of the Free State).