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## Regulatory framework for pharmaceuticals as endocrine disruptors: A critical review

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Pharmaceuticals such as: Analgesic and anti-inflammatories, lipid regulators and cholesterol lowering statin drugs, psychiatric drugs, histamine receptor antagonists, tetracyclines, macrolides, fluoroquinolines,  $\beta$ -lactams, sulfonamides and other antibiotics,  $\beta$ -blockers,  $\beta$  and  $\alpha$  agonist, barbiturates, diuretics, antidiabetics, anti-cancer, cardiac agents, contrast media agents, angiotestin agents, antifungals, dyspepsia drugs, anaesthetics, anthelmintics and antiseptics has been identified in groundwaters worldwide. This fact has encouraged regulatory agencies worldwide to start developing guidelines related to pharmaceuticals, food additives and personal care products as potential endocrine disruptors in a classification known as emerging contaminants. Emerging contaminants (EC) are defined as pollutants previously unknown or not recognized as such, whose presence in the environment is not necessarily new but the concern about the possible consequences in wildlife and human health is indeed. This fully revised and updated review delves into state-of-the-art studies providing fresh insights into the challenges that pharmaceuticals might face in the near future related to the regulatory framework. Actions further thanthe "drug take back program" might be legally required related to re-designing of pharmaceuticals based on endocrine disrupting potential, EC monitoring and waste disposal.

## **Biography**

Roeb Garcia-Arrazola did MPhil & PhD in Biochemical Engineering at University College London, and 3-years Postdoc in Green Chemistry of Biomaterials at Universidad Nacional Autonoma de Mexico. His professional experience include: Having designed a Technology Park for Life Sciences, being the first coordinator for the *Water Centre for Latin America and the Caribbean* (co-funded by IDB and FEMSA) and being the first Director for Innovation at the Ministry of Science, Technology and Innovation in Mexico City. He is currently a researcher at Tecnológico de Monterrey focusing on biomaterials and emerging contaminants in water.

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