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Editorial Open Acces

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Hormones which we usually deal with in Nature can be sub-categorized: natural steroid hormones (17ß-estradiol; E2, estrone; E1, estriol; E3) and several synthetic hormones (17 -ethynylestradiol; EE2, diethylstilbestrol; DES, bisphenol A). Steroidal hormones are cholesterol derivatives and control sex and growth. Among steroidal hormones, 17ß-estradiol is the most active which commonly occurs in Nature. Several methods such as high performance liquid chromatography (HPLC), gas chromatography-mass spectrometry (GC-MS), liquid chromatography-mass spectrometry-mass spectrometry (LC-MS-MS) and gas chromatography-mass spectrometry-mass spectrometry (GC-MS-MS) have been developed to detect 17ß-estradiol in the environment. 17ß-estradiol is widely detected in sewage treatment plants (STPs), rivers, sediments and digester sludge. Considering persistence (P), bioaccumulation (B), and toxicity (T) of 17ß-estradiol, 17ß-estradiol is sub-persistent, highly bioaccumulative and toxic for wildlife. Many investigators showed that 17ß-estradiol occurred in the aquatic environment and in the sediments at low concentrations. A signi cant amount (approximately 40% of total detections) of reproductive hormones including 17ß-estradiol was distributed in the U.S. nationwide samples (139 streams across 30 states). e concentration of 17ß-estradiol in the aquatic environment was commonly few nanograms. In addition, the concentration of 17ß-estradiol derivatives in a stream was reported tens of nanograms. e oral uptake of 17ß-estradiol is inactive due to the gastrointestinal or hepatic inactivation. Most of it was transferred as glucuronide conjugates (60-90%), while others were sulfated compounds and diconjugates. Conjugation occurs as 17ß-estradiol in the gastrointestinal tract. e oral uptake of 17ß-estradiol is limited by the absorption of conjugates because of the hydrolysis of 17ß-estradiol and the dose-limiting rate

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