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CYTOSTATIC DRUGS IN ENVIRONMENTAL SAMPLES. AN UPDATE ON THE EXTRACTION AND DETERMINATION PROCEDURES

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Highlights

- Methods for the analysis of cytostatics in environmental samples are overviewed
- LC-MS is the most used determination technique
- Cytostatics are measured in $\mu g \cdot L^{-1}$ in hospitals effluent and in $ng \cdot g^{-1}$ in sludges
- Metabolites can be found in higher concentrations than parent compounds

Abstract

Antineoplastic or cytostatic compounds are used to fight cancer. They are a broad group of organic compounds, possessing a diverse range of physico-chemical characteristics. Given the toxicity of these compounds, the development of reliable analytical methods for their analysis became necessary. Cytostatics are found in very low concentrations, and their determination is even more complicated by the complex matrices in which they are bound. Cytostatic compounds are considered to be emerging contaminants, and there is little knowledge about their products of degradation and their possible toxicity. For this reason, it is essential to obtain data about the presence of cytostatic compounds and their metabolites in environmental samples. Obtaining such data will require advanced sampling techniques and analytical tools, including the latest separation and determination methods and instrumentation. In this overview, we discuss the current methods used for extraction and quantitative determination of these compounds in liquid and solid environmental samples.