

Outlook to Xenobiotics

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A xenobiotic is a chemical substance found within an organism that is not naturally produced or expected to be present within the organism and considered as substances foreign to an entire biological system, which did not exist in nature before their synthesis by humans. Xenobiotics include antioxidants, drugs, carcinogens, contaminants, food additives, hydrocarbons and pesticides and usually are resistant to degradation and accumulate in the environment due to their recalcitrant properties. The xenobiotic accumulation occurs particularly in the subsurface environment and water sources, as well as in biological systems, having the potential to impact human health and environment. Moreover, these compounds can be accumulated in food chain and cause harm to the different ecosystems. We are chronically exposed to over than 250,000 different xenobiotic that are considered safe or known to be safe alone. But recent research studies demonstrate that many of these compounds are suspected to impact human health and environment, and their combination in complex mixtures could exacerbate their harmful effects. This paper focus on the synergistic toxic effect of xenobiotics mixtures on environment and also on human health, notably on the endocrine system and intestinal microbiome. For the degradation of xenobiotic compounds various physico-chemical and biological methods have been used but all these methods produce toxic by-products that are hazardous to the environment. The present paper also provides a comprehensive outlook on the utilization of new technologies for removal of xenobiotic environmental pollutants.

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