

## **ABSTRACT**

Parabens are biocides used as preservatives in food, cosmetics and pharmaceuticals. They possess antibacterial and antifungal activity due to their ability to disrupt cell membrane and intracellular proteins, and cause changes in enzymatic activity of microbial cells. Water, one of our most valuable natural resource, has become a huge reservoir for parabens. Halogenated parabens from chlorination/ozonation of water contaminated with parabens have shown to be even more persistent in water than other types of parabens. Unfortunately, there is dearth of data on their (halogenated parabens) presence and fate in groundwater which serves as a major source of drinking water for a huge population in developing countries. An attempt to neglect the presence of parabens in water will expose man to it through ingestion of contaminated food and water. Although there are reviews on the occurrence, fate and behaviour of parabens in the environment, they largely omit toxicity and removal aspects. This review therefore, presents recent reports on the acute and chronic toxicity of parabens, their estrogenic agonistic and antagonistic activity and also their relationship with antimicrobial resistance. This article further X-rays several techniques that have been employed for the removal of parabens in water and their drawbacks including adsorption, biodegradation, membrane technology and advanced oxidation processes (AOPs). The heterogeneous photocatalytic process (one of the AOPs) appears to be more favoured for removal of parabens due to its ability to mineralize parabens in water. However, more work is needed to improve this ability of heterogeneous photocatalysts. Perspectives that will be relevant for future scientific studies and which will drive policy shift towards the presence of parabens in our drinking waters are also offered. It is hoped that this review will elicit some spontaneous actions from water professionals, scientists and policy makers alike that will provide more data, effective technologies, and adaptive policies that will address the growing threat of the presence of parabens in our environment with respect to human health.