

Remediation of Pharmaceuticals Drugs from Wastewater †

Rahul Meena ¹, Prem Hembrom ¹, Mahipal Singh Sankhla ^{1,*}, Rahul Das ¹

¹ Department of Forensic Science, Vivekananda Global University, Jaipur, Rajasthan; rahulmb490@gmail.com (R.M.); mahipal4n6@gmail.com (M.S.S.); dasrahulfs@gmail.com (R.D.);

* Correspondence: mahipal4n6@gmail.com (M.S.S.);

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Abstract: The presence of pharmaceuticals and endocrine-disrupting compounds in aquatic systems is a matter of great concern. The occurrence, fate, and potential toxicity of these compounds have triggered the interest of the scientific community. As a result of their high solubility and low volatility, they are common in aquatic systems, and wastewater treatment plants (WWTP) are the main reservoir for these contaminants. Conventional WWTPs have demonstrated an inability to remove these contaminants completely; hence, different advanced treatment processes have been explored to compensate for the lapses of the conventional system. The outcome of this study revealed the significant improvements made using advanced treatment processes to diminish the number of contaminants; however, some contaminants have proven to be refractory. Thus, there is a need to modify various advanced treatment processes or employ additional treatment processes. Polymer inclusion membranes (PIMs) are a liquid membrane technology that is highly efficient at removing contaminants from water. They have been widely studied for removing heavy metals and nutrients from aquatic systems; however, only a few studies have investigated the use of PIMs to remove pharmaceutically active compounds from aquatic systems. This article raises awareness on the application of PIMs as a promising water treatment technology that has a great potential for the remediation of pharmaceuticals and endocrine disruptors in the aquatic system due to its versatility, ease/low cost of preparation, and high contaminant selectivity.

Keywords: drugs; wastewater treatment; membrane; removing.

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