

Heterocyclic resin-(1-amino, 2-hydroxy) propyl ether-tamarind kernel powder as a new approach for heavy metal detoxification

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ABSTRACT Tamarind kernel powder (TKP) is a polysaccharide that is mainly composed of cellulose, xylose, and galactoxylose. The chemical modification of TKP can offer different biosorbents that can be used to remove the heavy metals from the industrial wastewater. Here TKP is a natural gum polymer and lies under non-toxic, biodegradable natural polymer. This hydrophilic polysaccharide is used in the synthesis of chelating resins. The present study focused on the synthesis of a new TKP-based powder chelating resin named as (1-amino, 2-hydroxy)propyl ether allied TKP resin. This has been done with the chemical modification of TKP with epichlorohydrin in the presence of NaOH and dioxane as the reaction medium. The newly synthesized resin can be used as both ion binder for heavy metals and a flocculant. Because of its eco-friendly nature, it supports green chemistry.

KEYWORDS Atomic absorption spectroscopy, Biopolymer, Heterocyclic compound tamarind kernal powder, (1-Amino- 2-hydroxy) propyl ether allied tamarind kernal powder resin.

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