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Comparison of the tolerance of cadmium (Cd²⁺), lead (Pb²⁺) and their mixtures by *Staphylococcus* sp. isolated from a water body receiving textile effluent

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Cd²⁺ and Pb²⁺ are widely used heavy metals in industries such as electroplating, battery, plastic and pigment production etc. These heavy metals are considered as highly threatening substances to human body, which can cause carcinogenic effects and organ dysfunctions. The isolated *Staphylococcus* sp. from waste effluent was exposed to a range of single and mixed metal concentrations of Cd²⁺ and Pb²⁺ in modified Tris-minimal medium. The growth patterns of *Staphylococcus* sp. during 24-hour intervals were monitored spectrophotometrically at 600 nm. The effective concentrations (EC₅₀) of *Staphylococcus* sp. were calculated up to 72 hours. *Staphylococcus* sp. showed a gradually increasing growth in Pb²⁺ containing medium, where as a decreasing growth in Cd²⁺ containing medium was observed after 48 hours. It showed an increasing growth when grown in the presence of both metals. EC₅₀ values at 24, 48 and 72 hours with Cd²⁺ and their mixture showed a gradual decrease while EC₅₀ values of Pb²⁺ showed a gradual increase. Results of the study indicated that *Staphylococcus* sp. has comparatively high tolerance to Pb²⁺ than Cd²⁺ and their mixtures.

Keywords: *Staphylococcus* sp., Cd²⁺, Pb²⁺, EC₅₀, Tolerance