

## Abstract

Heavy metals (HM) toxicity is becoming a major threat to living organisms in recent years due to the increase in population and anthropogenic activities. Their multiple industrial, domestic, agricultural, medical and technological applications have led to their wide distribution in the environment; raising concerns over their potential effects on human health and the environment. Their toxicity depends on several factors including the dose, route of exposure, and chemical species, as well as the age, gender, genetics, and nutritional status of exposed individuals. Lead (Pb) shares about 10% of total pollution produced by heavy metals. The uptake of lead by the primary producers (plants) is found to affect their metabolic functions, growth, and photosynthetic activity. The accumulation of lead in excess can cause up to a 42% reduction in the growth of the roots. The present study deals with isolation and identification of lead resistant bacteria from contaminated wastewater of tanneries effluents from the Quaid-e-Azam Industrial Estate, Kot-Lakhat, Lahore, Punjab. From the morphological, biochemical analysis and 16S rRNA sequencing, lead resistant bacteria isolate were identified as *Bacillus cereus* (OP819883) and *Bacillus sp.* (OP821491). Maximum tolerance concentration (MTC) was shown against the lead acetate at different levels. The present study reveals that the lead resistant bacterial isolate can be used for bioremediation of lead.