

عنوان مقاله:

Thermoacidophilic bacteria isolated from Sarcheshmeh low-grade copper ore in chalcopyrite bioleaching from mineral tailing

محل انتشار:

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خلاصه مقاله:

This research has focused on isolating and identifying different thermoacidophilic bacteria from a Sarcheshmeh low-grade copper ore and evaluating their ability of copper bioleaching from the mineral tailing. After the isolation of the bacteria, molecular identification was carried out based on the 16S rRNA gene sequences and drawing the phylogenetic tree. Then, the effect of the pH, pulp density, and composition of the media on the copper bioleaching was determined using the identified bacteria. The isolated strain (Strain SCM1) belonged to Delftia acidovorans with a 95.73% of identity. The optimal condition for the copper bioleaching was reported in a medium consisting of sulfur (10 g/L), glucose (10 g/L), yeast extract (2 g/L), and mineral tailing (5% wt/vol) at the pH of 2.00 at 50°C. Under this condition, the highest amount of copper (83%) was bioleached. It proves that the lately isolated strain can be effectively employed in the copper bioleaching process.

کلمات کلیدی:

Bioleaching, Copper, Mineral tailings, Thermoacidophilic bacteria, 16S rRNA

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