Special Issue

Heavy Metal Pollution and Bioremediation: Application and Mechanism

Message from the Guest Editors

Industrialization and population growth have intensified heavy metal pollution, a critical global issue due to the non-degradable, accumulative, and toxic nature of heavy metals. Long-term exposure can cause severe health problems, including cancer, necessitating effective remediation technologies to reduce their mobility and biotoxicity. Current approaches include physical, chemical, and bioremediation methods. Bioremediation offers advantages such as low cost, eco-friendliness, and minimal environmental impact. However, its application is constrained by factors like temperature, pH, metal types, and biological growth characteristics. Despite progress in single-pollutant bioremediation, addressing complex heavy metal pollution remains challenging. This *Biology* Special Issue welcomes research and reviews on plant, microbe, and animal-based remediation strategies. Topics include microbial remediation, phytoremediation, plant–soil–microbe interactions, enhanced and combined remediation, hyperaccumulators, and microbial-induced calcium carbonate precipitation.

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A major strength of biological science is the diversity of approaches that biological scientists apply to their research problems. *Biology* reflects this diversity and brings together studies employing the varied experimental and theoretical approaches that are fueling biological discovery. *Biology*, the journal, is a fully peer-reviewed publication with a rapid and economical route to open access publication and is listed on PubMed. All articles are peer-reviewed and the editorial focus is on determining that the work is scientifically sound rather than trying to predict its future impact.

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