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Mechanism and Genes for Heavy Metal Tolerance and Accumulation in Plants

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Deadline for manuscript
submissions:

closed (30 June 2020)

Message from the Guest Editor

Dear Colleagues,

Heavy metal is very important in plants, as it is easily absorbed through essential element transporters to plants, and finally enters humans. Heavy metals are very toxic to plants, however, plants have been evolving to improve their metal tolerance capacity to survive in environments contaminated with heavy metals. Plants have developed diverse metal tolerance strategies, including lower accumulation (lower uptake and higher export), vacuolar sequestration, chelation, root to shoot translocation (xylem loading), reduction of metal-induced oxidative stress, chemical conversion to a less toxic form, etc. We have also learned novel mechanisms from metal hyper-accumulator and hyper-tolerant plants. We have been trying to identify new components involved in various plant strategies and to understand how these different strategies are interconnected. Our knowledge will contribute to the development of metal hypoaccumulating crops and phytoremediators, and thus to human health and well-being.

Prof. Seongbin Hwang

Guest Editor



mdpi.com/si/28987

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Message from the Editor-in-Chief

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