

Special Issue

Adaptation of Living Organisms in Space: From Mammals to Plants

Message from the Guest Editors

When living organisms travel from the surface of the Earth to space, they will experience, not only a gravity change from 1 to 0 g, but also other environmental stresses, such as cosmic radiation. To adapt to the new environment, organisms inevitably undergo changes at all levels from molecular to physiological. Within a cell, microgravity has already been shown to alter RNA and protein expression. In humans, such an adaptation would result in immune dysfunction, and bone and muscle loss, with underlying changes of transcriptomic, metabolomic and proteomic profiles. Impacts of the space environment can also be found in insects, plants and microorganisms. This Special Issue is dedicated to understanding the effects of the space environment on a wide range of organisms from mammals to plants, with a focus on the molecular mechanisms by which these organisms adapt to the new environment.

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