



Recent Advance in Molecular and Cellular Biology

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Message from the Guest Editors

Dear Colleagues,

Life is a balance between symmetry and its breaking. The biological kingdom is ruled by physicochemical symmetries that intertwine in increasing degrees of complexity. The preservation/loss of symmetries plays a pivotal role in the basic structural, functional, and biological unit of life: the cell. Symmetric or asymmetric cellular division induces similar or different fates for daughter cells, respectively, allowing the self-renewal or differentiation of the mother cell. Furthermore, symmetry carefully drives several molecular processes, such as DNA replication or chromosome set distribution, during mitosis phases.

Development and disease happen when some inherited symmetries are broken, and novel symmetries appear. More broadly speaking, the breaking of symmetry is the basis of evolution through various, growing stages of complexity at the molecular and cellular level, and it is a phenomenon that is commonly referred to as mutation. In the human species, mutation can be responsible for the onset of congenital or somatic diseases, such as neurodevelopmental disorders or cancer, even if it is not always understood with a negative meaning...





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Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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