Special Issue

Phase Separation in Molecular and Cellular Biology

Message from the Guest Editors

The last decade has witnessed remarkable technical advances and scientific breakthroughs that have enhanced our understanding of the molecular and cellular basis of phase separation in cell biology. The creation of two distinct phases from a single homogeneous mixture of molecules provides a novel theoretical framework to understand a variety of cellular processes. These include the formation of oncogenic signalling complexes and organization of non-membrane bound compartments involved in neurodegeneration. Notably, findings emerging from phase separation studies might inspire design of novel biomaterials. This Special Issue, entitled "Phase separation in molecular and cellular biology," focuses on the broad topic of molecular and cellular basis of phase separation. We welcome original scientific reports, research articles, communications, and reviews that illustrate how phase separation originates, evolves, and how its misregulation leads to cellular dysfunction. We seek to also highlight technological progresses, current challenges, and perspectives in unravelling the role of phase separation in biomaterial and drug design.

Guest Editors

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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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