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Special Issue Reprint

Cellular Quiescence and Dormancy

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Most cells, including those in our bodies, spend most of their time in non-dividing, quiescent states, yet these quiescent cells are much less studied than proliferating cells. Quiescence is characterised by a reversible arrest of cell proliferation, reprogrammed gene expression and metabolism, and increased stress resilience and longevity. Remarkably, some specialised dormant cells, such as microbial spores and plant seeds, can survive harsh conditions for centuries. Human cells that alternate between cellular quiescence and proliferation are critical for ageing- and disease-associated processes, including stem-cell function, tissue homeostasis and renewal, immune responses, and tumour drug resistance.

This Special Issue reprint aims to highlight the understudied genetic, regulatory and molecular adaptations that characterise cellular quiescence and dormancy across diverse organisms. Research areas cover various cellular and molecular processes in non-dividing, quiescent cells of diverse cells, from microbes to human cancer, serving as fundamental strategies for their normal development, function, and maintenance, or for their long-term survival in the face of adverse conditions.

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