



## The Role of Phytochemicals in Aging and Aging-Related Diseases

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### Message from the Guest Editors

Aging is an inevitable process influenced by genetic, lifestyle, and environmental factors. Among the variegated class of anti-aging molecules, phytochemicals and their metabolites have been suggested to improve aging and aging-related diseases. They comprise a large family of plant-derived metabolites with highly diverse chemical structures that are not directly involved in the growth and development of plants but are synthesized to increase their survival fitness. A growing body of evidence suggests that phytochemicals can not only act as simple antioxidant agents that neutralize free radicals, but that they can also modulate one or more cellular pathways associated with lifespan, aging, and disease prevention. Indeed, these bioactive molecules exert anti-aging effects via different mechanisms, such as the inhibition of cell senescence and mitochondrial dysfunction and the reduction of telomere shortening, epigenetic alterations, and genomic instability. Finally, their excellent safety profile and large structural diversity make phytochemicals particularly attractive for drug discovery processes.





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