

Special Issue

Genetics and Epigenetics of Aging and Longevity

Message from the Guest Editor

Lifespan is a complex quantitative characteristic that makes a significant contribution to Darwinian adaptiveness. The objective of this topic is to summarize the available information about underlying genetic and epigenetic determinants of longevity and aging. The redistribution of energy resources from one pathway to the other can induce or inhibit the “longevity program”, providing increased vitality and aging slowdown. These trends include heterochromatin recovery, retrotransposition suppression, and aneuploidy elimination; restoring the acidity of lysosomes; telomere elongation; suppression of chronic inflammation; elimination of protein crosslinks; elimination of senescent cells; recovery of NAD⁺ levels; inhibition of mTOR, S6K, TGF α , and AT1; and controlled activation of the “longevity program” genes FOXO, AMPK, PGC1 α , and NRF2. This topic could help toward a better understanding of the mechanisms of aging and longevity and identification of new biomarkers of aging and longevity interventions and could increase their translational potential.

Guest Editor

Prof. Dr. Alexey Moskalev

Moscow Institute of Physics and Technology, Moscow, Russia

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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Editor-in-Chief

Prof. Dr. Maurizio Battino

Department of Odontostomatologic and Specialized Clinical Sciences,
Sez-Biochimica, Faculty of Medicine, Università Politecnica delle
Marche, Via Ranieri 65, 60100 Ancona, Italy

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