



genes



Special Issue Reprint

Genetic Determinants of Human Longevity

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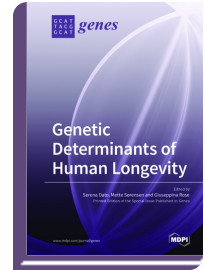
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In the last two decades, due to the continuous increase of lifespans in Western societies, and the consequent growing of the elderly population, have witnessed an increase in the number of studies on biological and molecular factors able to promote healthy aging and reach longevity. The study of the genetic component of human longevity demonstrated that it accounts for 25% of intra population phenotype variance. The efforts made to characterize the genetic determinants suggested that the maintenance of cellular integrity, inflammation, oxidative stress response, DNA repair, as well as the use of nutrients, represent the most important pathways correlated with a longer lifespan. However, although a plethora of variants were indicated to be associated with human longevity, only very few were successfully replicated in different populations, probably because of population specificity, missing heritability as well as a complex interaction among genetic factors with lifestyle and cultural factors, which modulate the individual chance of living longer. Thus, many challenges remain to be addressed in the search for the genetic components of human longevity. This Special Issue is aimed to unify the progress in the analysis of the genetic determinants of human longevity, to take stock of the situation and point to future directions of the field. We invite submissions for reviews, research articles, short-communications dealing with genetic association studies in human longevity, including all types of genetic association studies, as well as the characterization of longevity-related genes.



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