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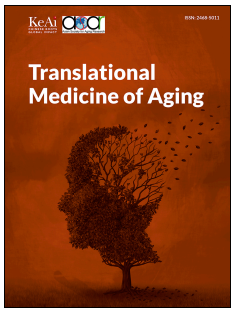

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Therapeutic potential of boosting NAD^+ in aging and age-related diseases

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Abstract:

Nicotinamide adenine dinucleotide (NAD^+) is an essential cofactor in all living cells that is involved in fundamental biological processes. NAD^+ depletion has been associated with hallmarks of aging and may underlie a wide-range of age-related diseases, such as metabolic disorders, cancer and neurodegenerative diseases. Emerging evidence implicates that elevation of NAD^+ levels may slow or even reverse the aspects of aging and also delay the progression of age-related diseases. Here we discuss the roles of NAD^+-synthesizing and -consuming enzymes in relationships to aging and major age-related diseases. Specifically, we highlight the contribution of NAD^+ depletion to aging and evaluate how boosting NAD^+ levels may emerge as a promising therapeutic strategy to counter aging-associated pathologies and/or accelerated aging.