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Natural product-derived pharmacological modulators of Nrf2/ARE pathway for chronic diseases.

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Abstract

Covering: 2000 to 2013. Oxidative stress is the central component of chronic diseases. The nuclear factor erythroid 2-related factor 2/antioxidant response element (Nrf2/ARE) pathway is vital in the up-regulation of cytoprotective genes and enzymes in response to oxidative stress and treatment with certain dietary phytochemicals. Herein, we classify bioactive compounds derived from natural products that are Nrf2/ARE pathway activators and recapitulate the molecular mechanisms for inducing Nrf2 to provide favorable effects in experimental models of chronic diseases. Moreover, pharmacological inhibition of Nrf2 signalling has emerged as promising strategy against multi-drug resistance thereby improving the treatment efficacy. We have also enlisted natural product-derived inhibitors of Nrf2/ARE pathway.

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