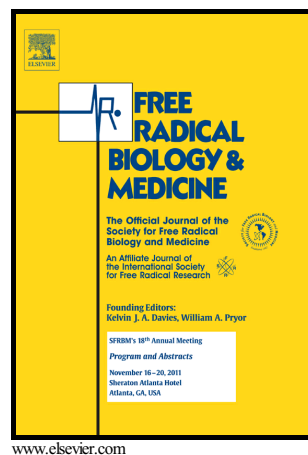


Author's Accepted Manuscript

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PII: S0891-5849(16)30424-5
DOI: <http://dx.doi.org/10.1016/j.freeradbiomed.2016.09.010>
Reference: FRB12997

To appear in: *Free Radical Biology and Medicine*

Received date: 7 April 2016
Revised date: 29 August 2016
Accepted date: 10 September 2016

Cite this article as: Jiayu Zhu, Huihui Wang, Feng Chen, Jingqi Fu, Yuanyuan Xu, Yongyong Hou, Henry H. Kou, Cheng Zhai, M. Bud Nelson, Qiang Zhang, Melvin E. Andersen and Jingbo Pi, An overview of chemical inhibitors of the Nrf2-ARE signaling pathway and their potential applications in cancer therapy *Free Radical Biology and Medicine* <http://dx.doi.org/10.1016/j.freeradbiomed.2016.09.010>

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An overview of chemical inhibitors of the Nrf2-ARE signaling pathway
and their potential applications in cancer therapy

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Abstract:

The nuclear factor erythroid 2-related factor 2 (Nrf2) is a key transcription factor regulating a wide array of genes for antioxidant and detoxification enzymes in response to oxidative and xenobiotic stress. A large number of Nrf2-antioxidant response element (ARE) activators have been screened for use as chemopreventive agents in oxidative stress-related diseases and even cancer. However, constitutive activation of Nrf2 occurs in a variety of cancers. Aberrant activation of Nrf2 is correlated with cancer progression, chemoresistance, and radioresistance. In this review, we examine recent studies of Nrf2-ARE inhibitors in the context of cancer therapy. We enumerate the possible Nrf2-inhibiting mechanisms of these compounds, their effects sensitizing cancer cells to chemotherapeutic agents, and the prospect of applying them in clinical cancer therapy.

Key words:

Nrf2, ARE, inhibitor, chemoresistance, cancer therapy

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