



Oxidative stress targets in pulmonary emphysema: focus on the Nrf2 pathway

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Résumé en anglais
IMPORTANCE OF THE FIELD: Oxidative stress has been implicated in the pathogenesis of pulmonary emphysema. Nuclear factor erythroid-2-related factor 2 (Nrf2) a major antioxidant transcription factor could play a protective role in pulmonary emphysema.
AREAS COVERED IN THIS REVIEW: Nrf2 is ubiquitously expressed throughout the lung, but is predominantly found in epithelium and alveolar macrophages. Evidence suggests that Nrf2 and several Nrf2 downstream genes have an essential protective role in the lung against oxidative stress from environmental pollutants and toxicants such as cigarette smoke, a major causative factor for the development and progression of pulmonary emphysema. Application of Nrf2-deficient mice identified an extensive range of protective roles for Nrf2 against the pathogenesis of pulmonary emphysema. Therefore, Nrf2 promises to be an attractive therapeutic target for intervention and prevention strategies.

WHAT THE READER WILL GAIN: In this review, we discuss recent findings on the association of oxidative stress with pulmonary emphysema. We also address the mechanisms of Nrf2 lung protection against oxidative stress based on emerging evidence from experimental oxidative disease models and human studie.

TAKE HOME MESSAGE: The current literature suggests that among oxidative stress targets, Nrf2 is a valuable therapeutic target in pulmonary emphysema.

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