

# **Mechanism of heme oxygenase-1 gene induction by quercetin in rat aortic smooth muscle cells**

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摘要

## **Abstract**

We previously reported that adenovirus-mediated gene transfer of heme oxygenase-1 (HO-1) inhibits the development of atherosclerosis in apolipoprotein E-deficient mice. This finding implies that HO-1 induction is beneficial for protecting blood vessels. We also found that quercetin, a common polyphenolic compound in foods of plant origin, induces HO-1 expression in RAW264.7 cells. This study was aimed at examining the potency of quercetin as a HO-1 inducer and its regulation in rat aortic smoothmuscle cells (RASMCs). We showed that quercetin-induced HO-1 production was in time- and dose-dependent fashions, and that this regulation occurred at both transcription and translation levels. Quercetin increased p38 mitogen-activated protein kinase (p38MAPK), but inhibited extracellular signal-regulated kinase in RASMCs. The level of quercetin-induced HO-1 expression was attenuated by SB202190 (a p38MAPK inhibitor). Taken together from the data in this study, we suggest that quercetin inducedHO-1 expression,at least in part, through p38MAPK.