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### Vanadate-induced expression of hypoxia inducible factor-1 $\alpha$ via oxygen-dependent and -independent pathways

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#### Abstract:

Increase in hypoxia-inducible factor-1 $\alpha$  (HIF-1 $\alpha$ ) expression is caused by some essential trace elements such as vanadium and cobalt even under normoxic conditions. The mechanism of HIF-1 $\alpha$  activation caused by vanadium is not documented well whereas several authors proposed that by cobalt. When HEK293 cells were treated with 100  $\mu$ M sodium orthovanadate, HIF-1 $\alpha$  expression increased within 6 to 12 hours. The increase was suppressed by HIF-1 $\alpha$ -specific inhibitors, YC-1 for the metal-related oxygen sensing pathway, and 17-AAG for the Hsp90-dependent pathway. The results suggest that orthovanadate increases HIF-1 $\alpha$  expression via both oxygen-dependent and -independent pathways.

**Key words:** [HIF-1 \$\alpha\$](#) , [vanadium](#), [cobalt](#), [17-AAG](#), [YC-1](#)

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