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Ozone inactivates HIV at noncytotoxic concentrations

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Summary

The inactivation of human immunodeficiency virus (HIV) and cytotoxic properties of ozone-treated serum and serum-supplemented media were examined. The titer of HIV suspensions in human serum was reduced in a dose-dependent manner when treated with total reacted ozone concentrations at a range of 0.5 to 3.5 $\mu g/ml^{-1}$. Complete inactivation of HIV suspensions was achieved by 4.0 $\mu g/ml^{-1}$ of ozone in the presence or absence of H-9 cells. In contrast, cellular metabolism, as measured by MTT dye cleavage, and DNA replication, as measured by BUdR incorporation, were enhanced in H-9 cells grown in media treated with quantities of ozone that completely inactivate HIV. The permissively HIV-infected cell line HXB:H-9 was cultured in ozone-treated media for six days with culture supernatants being sampled and assayed on alternate days for HIV p24 core protein. HIV p24 was reduced in all treated cultures compared to control cultures, with an average reduction of 46% [p24].

HIV; Ozone; Noncytotoxic; Virus inhibitor

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