

Sagripani, J. L. and M. M. Lightfoote. 1996. Cupric and ferric ions inactivate HIV. *AIDS Res.Hum.Retroviruses* 12:333-337.

Abstract: Human immunodeficiency virus (HIV-1) was inactivated by either cupric or ferric ions when the virus was free in solution and also 3 hr after cell infection. Fifty percent inactivation of cell-free HIV was achieved with Cu(II) at a concentration between 0.16 and 1.6 mM, or by 1.8 to 18 mM Fe(III). Thus, the dose to inactivate 50% of infectious HIV (D50) by Cu(II) or Fe(III) is higher than that reported for glutaraldehyde (0.1 mM); between the D50 reported for sodium hypochlorite (1.3 mM) and sodium hydroxide (11.5 mM), and significantly lower than that required for HIV inactivation by ethanol (360 mM). Treatment of infected cells for 30 min at 20 degrees C with 6 mM Cu(II) or Fe(III) completely inhibited the formation of syncytia and the synthesis of virus-specific p24 antigen in HIV-infected cells, while still preserving cell viability. The virucidal properties of cupric and ferric ions could be exploited for the development of novel virucidal formulations efficient against HIV.