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Poster presentation

hmm.Coreceptor Perturbation as a Possible Mechanism Underlying the Immediate and Persistent Anti-HIV-1 Activity of the Microbicidal Compound PEHMB

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Microbicides, which are products capable of reducing or eliminating the risk of HIV-1 sexual transmission, are urgently needed to combat the global spread of HIV-1. Our efforts in this area are focused on the preclinical development of the polybiguanide, PEHMB (polyethylene hexamethylene biguanide). PEHMB has been shown to have low cytotoxicity both *in vitro* and *in vivo*, as well as *in vitro* activity against both cell-free and cell-associated forms of HIV-1. Flow cytometric analyses have shown that PEHMB exposure results in epitope-specific alterations in the detection of viral co-receptors CXCR4 and CCR5, suggesting that PEHMB acts by interfering with events critical to viral binding and entry. Changes in co-receptor detection have also been observed up to 24 hr after removal of PEHMB. Consistent with the latter result was the demonstration of persistent protection from infection in experiments in which cells were challenged with HIV-1 after removal of PEHMB. Cumulatively, these results suggest that HIV-1 co-receptors may play roles in PEHMB-mediated protection from HIV-1 infection, and that products containing PEHMB may provide both short- and long-term protection against HIV-1 transmission.