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Chemotactic activity of HIV-1 Nef for human monocytes

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Infiltration of HIV-1 infected and uninfected monocytes/macrophages in organs and tissues is a general phenomenon observed in progression of AIDS. HIV-1 Nef protein is considered as a progression factor in AIDS, and is released from HIV-1 infected cells. Here we show that extracellular Nef increases migration of monocytes. This effect is (i) concentration dependent, (ii) reaches the order of magnitude of that induced by fMLP or CC chemokine ligand 2 MCP-1, (iii) inhibited by anti-Nef monoclonal antibodies as well as by heating and (iiii) depends on a concentration gradient of Nef. Further, Nef does not elicit monocytic THP-1 cells to express chemokines such as CCL2, CCL3 and CCL4. These data suggest that extracellular Nef may contribute to disease progression as well as HIV-1 spreading through affecting migration of monocytes.