

「穿心蓮」のH I V - 1に関連した研究発表の一つを紹介

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MECHANISM OF INHIBITION OF HIV-1 INFECTION IN VITRO BY PURIFIED EXTRACT OF PRUNELLA VULGARIS.

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Crude extracts of four Chinese herbs, *Arctium lappa*, *Astragalus membranaceus*, *Andrographis paniculata*, and *Prunella vulgaris*, were assessed in several tissue culture lines for anti-HIV activity and for cytotoxicity. One extract, obtained from *P. vulgaris*, was able to significantly inhibit HIV-1 replication with relatively low cytotoxicity. The active factor was purified using sequential precipitations with ethanol and n-butanol, followed by reverse-phase and gel permeation high-performance liquid chromatographic separations. The active component was anionic with a molecular weight of approximately 10 kDa. The purified extract inhibited HIV-1 replication in the lymphoid cell line MT-4, in the monocytoïd cell line U937, and in peripheral blood mononuclear cells at effective concentrations of 6, 30, and 12.5 micrograms/ml, respectively. Pretreatment of uninfected cells with the extract prior to viral exposure did not prevent HIV-1 infection. By contrast, preincubation of HIV-1 with the purified extract dramatically decreased infectiousness. The purified extract was also able to block cell-to-cell transmission of HIV-1, prevented syncytium formation, and interfered with the ability of both HIV-1 and purified gp120 to bind to CD4. PCR analysis confirmed the absence of HIV-1 proviral DNA in cells exposed to virus in the presence of the extract. These results suggest that the purified extract antagonizes HIV-1 infection of susceptible cells by preventing viral attachment to the CD4 receptor.

Registry Numbers:

EC 2.7.7.- (HIV-1 reverse transcriptase)

EC 2.7.7.49 (RNA-Directed DNA Polymerase)

30516-87-1 (Zidovudine)

EC 2.7.7.- (HIV-1 Reverse Transcriptase)