

In vitro Anti-Gonococcal, Anti-Inflammatory and HIV-1 Reverse Transcriptase Activities of the Herbal Mixture

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Abstract : Traditional medicine often consists of complex ingredients prepared from a mixture of plant species. These herbal mixtures are used in the treatment of various ailments such as sexually transmitted diseases including HIV. The present study was carried out to determine the biological activities of the herbal mixture used traditionally in the treatment of sexually transmitted diseases. This herbal mixture consists of four plant species from families Asteraceae, Bignoniaceae, Fabaceae, and Myrtaceae. Five crude extracts (hexane, dichloromethane, methanol, water and boiled) of the herbal mixture were investigated for anti-gonococcal, anti-inflammatory, and reverse transcriptase activities. The anti-inflammatory activity of the plant extracts was determined by measuring the extract inhibitory effect on the pro-inflammatory enzyme lipoxygenase. The extracts were also tested for anti-HIV activity against recombinant HIV-1 enzyme using non-radioactive HIV-RT colorimetric assay. The boiled extract exhibited good anti-inflammatory activity with an IC_{50} of 87 $\mu\text{g/ml}$ compared to that of the positive control quercetin ($IC_{50} = 92 \mu\text{g/ml}$). All the other extracts showed little or no activity. Hexane extract was the only extract that showed reverse transcriptase extract inhibitory effect with an IC_{50} of 74 $\mu\text{g/ml}$. Anti-gonococcal and cytotoxicity investigations are underway. The preliminary results support the use of herbal mixture by traditional healers.

Keywords : sexually transmitted diseases, lipoxygenase, anti-inflammatory, herbal mixture

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