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RESEARCH ARTICLE

In vitro anti-HIV-1 activity of *Eclipta alba* plant extract

VENKANNA LUNAVATH, SOUMYA BILLA AND ESTARI MAMIDALA

ABSTRACT..... Highly active anti-retroviral therapy (HAART) is the current HIV/AIDS treatment modality. Despite the fact that HAART is very effective in suppressing HIV-1 replication and reducing the mortality of HIV/AIDS patients, it has become increasingly clear that HAART does not offer an ultimate cure to HIV/AIDS. The high cost of the HAART regimen has impeded its delivery to over 90 per cent of the HIV/AIDS population in the world. This reality has urgently called for the need to develop inexpensive alternative anti-HIV/AIDS therapy. This need has further manifested by recent clinical trial failures in anti-HIV-1 vaccines and microbicides. In the current study, we characterized a panel of extracts of traditional medicinal plants for their activities against HIV-1 replication. The aim of the present study was to evaluate the *in vitro* anti- HIV activity of *Eclipta alba* plant extracts. Extracts were prepared from dried fruits in n-hexane, ethyl acetate and n butanol. Peripheral Blood Mononuclear Cells (PBMCs) were isolated from healthy donors by ficoll-hypaque density gradient centrifugation method. A toxicity study was performed on all crude extracts by MTT assay using PBMCs isolated from whole blood. HIV-1 RT inhibition activity of the all solvent extracts of *Eclipta alba* was determined by a RetrsoSys HIV-1 RT activity kit (Innovagen, Sweden). The aerial parts of *Eclipta alba* extracts showed anti-HIV-1 activity and this plant has great potential for developing useful drugs.

KEY WORDS..... HIV, *Eclipta alba*, PBMCs, HIV-1 RT, Cytotoxicity

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Author for Correspondence -
VENKANNA LUNAVATH
Department of Zoology,
Kakatiya University, WARANGAL (A.P.) INDIA
See end of the article for **Coopted authors'**

INTRODUCTION.....

Since the discovery of the human immunodeficiency virus as the causative agent of AIDS New chemical entities with such activity may be identified through a variety of approaches, one of them being the screening of natural products. Plant substances are especially explored due to their amazing structural diversity and their broad range of biological activities. Several plant extracts have been shown to possess activity against HIV by inhibiting various viral enzymes (Vermani and Garg, 2002). Medicinal plants as potential sources of new active agents not only combine the advantage of being relatively non-toxic and hence more tolerable than rationally designed drugs, but also represent an affordable and valuable source of pharmacologically active substances that can be made sufficiently available through cultivation (King and Rewers, 1993). Nature has been a source of medicinal treatments for thousands of years, and plant-based systems continue to play an essential role in the primary health care (Budka *et al.,* 1995; Van Everbroeck *et al.,* 2000; Brown *et al.,* 2004). It is estimated that 25 to 50 per cent of all current pharmaceuticals are derived from plants (Cowan, 1999). In fact, it is now believed that plant based systems contribute 90 per cent of the newly discovered pharmaceuticals. The aim of the present study was to evaluate the *in vitro* anti-HIV activity of *Eclipta alba* plant extracts.

RESEARCH METHODS.....

The aerial parts of the *Eclipta alba* were collected and left at room temperature for two weeks to dry, then ground into powder for extraction with soxhlet techniques with