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Targeting transcription factor for treatment of HPV-Induced cervical cancer by herbal compounds

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Cervical cancer is the principal cause of cancer-related mortality in women of the developing countries that contribute more than 85% of global disease burden. Persistent infection with high-risk human papillomavirus (HR-HPV), most notably of the type 16 and 18, is an essential prerequisite for the development of cervical cancer resulting in dysregulation of host cell cycle by targeting pivotal cell cycle proteins p53 & pRb by their viral gene products E6 & E7, respectively. Constitutive expression of HR-HPV E6 and E7 oncogene is mainly dependent on the availability of host cell transcription factors that act upon viral promoter and enhancer region. Activator protein-1 (AP1), a heterodimer of a group of structurally and functionally related members of the Jun (c-Jun, JunB, JunD) and Fos family (c-Fos, FosB, Fra-1 and Fra-2) is one of the transcription factors that are essentially required for viral oncogene expression. The current work is about targeting the HPV oncogenic transcription on cervical cancer cells by herbal compounds. These compounds altered composition of transcription factor AP-1 from oncogenic to non oncogenic form thus downregulated constitutively active AP1 specific DNA binding activity and suppression of oncogenic c-Fos and cJun expression which was accompanied by inhibition of HPV18 transcription. In addition to inhibiting growth these compounds strongly induced apoptosis as evidenced by an increased expression of the pro-apoptotic protein Bax, suppression of the anti-apoptotic molecules Bcl-2, and activation of caspase-3 and cleavage of PARP-1.

Biography

Mr. Saurabh Maru served as Scientist & Group Leader at CBST (a DST, India & UTC, France collaborative centre), VIT University, Vellore. Currently he is Assistant Professor at Shri G S Institute of Technology and Science, a premier Engineering and Science Institute of central India established in 1952. Mr. Saurabh Maru completed his Master of Pharmacy (Pharmacology) from RGUHS, Bangalore and secured 4th rank in state. He is doing his Ph.D. from Rajiv Gandhi Technical University, M.P. He has published a paper in BMC Complementary and Alternative Medicine and written a chapter in book "Treatment of Advanced Stage Cancers: Current Status & Emerging Frontiers". He delivered talk in many national and international conferences.

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Evaluation of analgesic activity of polyherbal leaves extract of *Aloe Vera* and *Cannabis Sativa* against acetic acid induced writhing in mice

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Aloe vera contains salicylic acid which is an aspirin like compound with anti-inflammatory, analgesic and anti bacterial properties. It has anti pyretic properties for reducing fevers. Cannabis sativa is an annual herbaceous plant in the cannabaceae family. But not many scientific study have been carried out to reveal and collaborate the analgesic activity of polyherbal leaves extract of Aloe vera and Cannabis sativa. The aim of present study was to evaluate analgesic activity of Polyherbal leaves extract of Aloe vera and Cannabis sativa against acetic acid induced writhing in mice. All animals were divided into four groups of six mice each. Group I was treated as toxicant control to observe writhing and group II was pretreated with diclofenac sodium (100 mg/kg, i.p.) Group III and IV were pretreated with polyherbal leaves extract of Aloe vera and Cannabis sativa at two doses 100mg/kg and 200mg/kg p.o. respectively. Polyherbal leaves extract of Aloe vera, Cannabis sativa and Diclofenac sodium were given before 60 min of acetic acid administration. The results showed that polyherbal leaves extract of Aloe vera and Cannabis sativa significantly reduced number of writhing when compared with group I (Toxicant control) mice and the results were dose dependent. The toxicity study also revealed its safeness, thus the combination of plant extract can be hypothesized it is nontoxic. All data were expressed as mean ±SEM and were statistically analysed by one way ANOVA. It is concluded that polyherbal leaves extract of Aloe vera and Cannabis sativa can offer protection against acetic acid induced writhing in mice.

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