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Phytochemical investigation for anti-pro-inflammatory constituents from Indian medicinal plants

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Inflammation is cellular, hormonal and physiological response to stimuli. NO is produced by the oxidation of *L*-arginine catalyzed by NO synthase (NOS) pathway. In the NOS family, inducible NOS (*i*NOS) is particularly well known to be involved in the overproduction of NO in cells. Thus, NO-iNOS pathway is the important pathways which were involved in inflammatory processes. On the basis of ethnopharmcological evidence/ chemical resemblance, *Tylophora indica* (aerial parts and roots) and *Ailanthus excelsa* (aerial parts and root bark) were selected for *in vitro* NO inhibitory activity in LPS-activated murine cell lines (RAW264.7 and J774A.1). The plant extracts were prepared using solvent in order of hexane, dichloromethane, ethyl acetate and methanol by accelerated solvent extractor for all the plant materials. In addition, the alkaloidal rich fractions of *Tylophora indica* were made. All these phyto-extracts and alkaloidal rich fractions were evaluated for the inhibitory activity, cell viability of plant extracts was also studied by MTT assay on both cell lines. Out of 18 extracts of different plant sample, Tylophora indica aerial parts exhibited strong inhibition of NO production in dose dependent manner, in both cell lines. IC₅₀ were calculated for alkaloidal fraction of *Tylophora indica* aerial parts exhibited strong inhibition of NO production in dose dependent manner, in both cell lines. IC₅₀ were calculated for alkaloidal fraction of *Tylophora indica* aerial parts was selected for in-depth the control. On the basis of above finding the alkaloidal rich fraction of *Tylophora indica* aerial parts was selected for in-depth phytochemical investigation to get NO inhibitory constituents.

Biography

Udai C Agrahari U. C. has completed his B. Pharm from UPTU, Lucknow in 2006 and earned M.S. (Pharm.) in Natural Products from National Institute of Pharmaceutical Education and Research (NIPER) S.A.S. Nagar, Punjab, India in 2008. Currently, he is persuing PhD in Natural Products from NIPER S.A.S. Nagar, Punjab, India. He also served as an Assistant Professor in LPU Phagwara during 2008-2009 for one year. He has published two research papers in *Natural Product Research and Fitoterapia*.

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