Total Phenolics Concentration and Antioxidant Potential of Extracts of Medicinal Plants of Pakistan

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Thirty-seven plant organs, traditionally used as drugs, collected in Pakistan, were extracted with 70% acetone and analyzed for their total phenolics concentration and antioxidant potential. Seven extracts showed more than 85% inhibition of lipid peroxidation *in vitro* as compared with blank. Butylated hydroxytoluene (BHT) (IC_{50} = 233.6 μg / l ± 28.3) was the strongest antioxidant in our test system. The IC_{50} results indicate that the extracts of *Nymphaea lotus* L. flowers, *Acacia nilotica* (Linn.) Delile beans, *Terminalia belerica* Roxb. fruits, and *Terminalia chebula* Retz. (fruits, brown) were stronger antioxidants than α-tocopherol, while *Terminalia chebula* Retz. (fruit coat), *Terminalia chebula* Retz. (fruits, black) and *Ricinus communis* L. leaves were weaker antioxidant extracts than α-tocopherol and BHT. Total phenolics concentration, expressed as gallic acid equivalents, showed close correlation with the antioxidant activity. High performance liquid chromatographic analysis with diode array detection at 280 nm, of the seven extracts indicated the presence of hydroxybenzoic acid derivatives, hydroxycinnamic acid derivatives, flavonol aglycones and their glycosides as main phenolics compounds. This information, based on quick screening methods, enables us to proceed towards more detailed chemical and pharmacological understanding of these plant materials.