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Plasma desorption mass spectrometry (PDMS) of crude extracts of medicinal plants

Plasma desorption Mass spectrometry (PDMS) is a novel ion impact "soft" Ionization technique mainly due to its unique property of producing intact molecular ions from non-volatile and thermally fragile molecules. In this study, it was demonstrated that PDMS can be used to produce molecular ion peaks of active compounds in medicinal plants directly from crude extracts without purification. Combination of mass peaks corresponding to molecular ions and their fragments provides a means of identification of active compounds in crude extracts.

In a home built (department of Physics, University of Colombo) PDMS system, fast heavy ions (MeV fission fragments) from a ^{252}Cf source, have been used to desorbed and ionize organic molecules from a solid sample surface of crude extracts. Masses of desorbed secondary ions are determined by using the time-of flight (TOF) technique.

Crude extracts were prepared from Chilli (*Capsicum frutescens*), Turmeric *(Curcuma domestica*) Niyangala (*Gloriosa superba*) Minimal (Catharanthus roseus) and Comerica *(Alo-vera),* using methanol as the solvent. It was shown that addition of citric acid to crude extracts enhances molecular ion yield and thereby increases the signal to noise t=ratio of the molecular ion peak of the active compounds significantly. These observations provide a good foundation for quantitative analysis of active compounds from crude extracts using PDMS.