Title:	Metabolomic profiling of Momordica Charantia L. using 1 H NMR spectroscopy and multivariate statistical analysis
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Abstract:	The work presented in this thesis project shows the application of NMR spectroscopy in the area of metabolomics. This study signifies the applications of NMR-based metabolomics in the area of plant science and the thesis work mainly focuses on the utility of NMR-based metabolomics for metabolite profiling of different sections viz. Skin, Seed and the Flesh of Momordica Charantia (MC) or Bitter gourd or Karela in Hindi Fruit. profiled for metabolites helpful in treating type 2 Diabetes Mellitus. The chapters describe the basic principle of NMR spectroscopy and metabolomics, as applied to metabolic studies. The study enlists the various pre-treatment and pre- processing steps required for conversion of a raw NMR data into the data suitable to do multivariate analysis namely PCA and OPLS-DA. The results of present work demonstrated that the combined use of multivariate statis- tical techniques with NMR spectroscopy or Mass spectrometry is a feasible approach to discriminate different parts of (MC) fruit and finding relative concentration of sec- ondary metabolites present in each part. Moreover, the sensitivity of this analytical tool allowed the identification of medicinally significant plant secondary metabolites, paving the way for further investigations.
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