

The study of mammalian metabolism through NMR-based metabolomics

Abstract:

High-resolution NMR spectroscopy has been widely used to monitor metabolism almost since the technique's development. It is now one of the principle technologies used in metabolomics, to profile the metabolite compliment of a cell, tissue, organism, or biofluid. This chapter describes how tissue extracts are prepared for NMR spectroscopy and, in particular, focuses on two approaches based on perchloric acid and methanol/chloroform extractions. This is followed by a description of key NMR experiments that can be used to profile tissue extracts, biofluids, or intact tissues. While these NMR techniques should be optimized for a particular sample set, we provide some tried and tested starting parameters for these experiments which should allow the user to acquire good quality spectra.