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NMR Studies of Metabolites in Cells and Tissues

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Advances in the sensitivity, lineshape and resolution available from NMR experiments, and in data processing techniques, has enabled the study of metabolites in biofluids, cells and tissues to progress rapidly. Analysis of these compounds provides very important information about biochemical progress of cells and tissues, especially as they move from healthy to disease states. In fact, the metabolite profile can provide highly complementary information to that obtained from the genomic and proteomic information, allowing researchers to coordinate a better overall picture of drug efficacy. This presentation will review the study of metabolites in biofluids (urine and blood), including hardware and software for complete analyses. In addition, techniques and data representing the more complicated problem of recording metabolite information using cells and tissues will be provided. Overall, the benefit of NMR (quantitative, complete information) shows promise for developing tools that will enable more complete diagnoses of tumor progression, aiding our understanding of potential treatments.