

NMR ANALYSIS OF HDPs: THE CASE OF ST. JOHN'S WORT EXTRACTS**Anna Rita Bilia*, Maria Camilia Bergonzi, Franco Francesco Vincieri****Department of Pharmaceutical Sciences, via Gino Capponi, 9,
University of Florence, Florence, Italy.**

Quality control and stability tests of HDs, HPDs and HMPs are in general achieved through high-resolution chromatography techniques. These are generally recognised as very powerful methods but it is often not easy to develop a simple and rapid chromatographic separation of all the constituents and very often unknown or unexpected compounds are not evidenced. In this study high-field NMR is considered as an analytical instrument to fully characterise some St. John's wort commercial extracts and to evaluate the stability of their constituents.

The chromatographic analysis was carried out on a HP 1090 L interfaced with a DAD and a HP 1100 MSD API-ES. NMR experiments were performed with a Bruker Avance-600 spectrometer operating at 600.13 MHz. A sample was also submitted to photo- and thermal stability tests according to ICH guidelines. Both HPLC and NMR methods evidenced the presence flavonols, phloroglucinols, quinic acid derivatives and naphthodianthrones. NMR experiments evidenced also the presence of shikimic acid, sucrose, lipids, polyphenols and traces of methanol. Quantitative HPLC and NMR data concerning the three characteristic classes of constituents were in agreement. Thus, NMR resulted better than HPLC to evidence residual solvents of the extractive process or unknown or unexpected compounds. Moreover it is very simple and rapid because it does not require sample pre-treatment and it can be applied for rapid screening and to complete phytochemical characterisation of HDPs.