

Ultra-filtered synovial fluid extracted from reactive arthritis patients

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Field strength: 400 MHz

Why is this your favorite spectrum?

1D-NOESY (noesy1dgppr, with mixing time 80-100ms) and 1D-CPMG (cpmgpr1D, with T2 filter time 60-100 ms) are often used for quantitative profiling of urine and serum metabolites, respectively. The 1D-NOESY is used for urine samples as it has been demonstrated to offer reliable concentration profiling in the absence of higher molecular weight species such as proteins, lipo-proteins and fats. The ultra-filtered synovial fluid (SF), similarly, lacks the higher molecular weight species owing to filtering process. Therefore, for concentration profiling of filtered SF, the 1D-NOESY seems to be a better option practically. However, when the 1D NOESY and 1D-CPMG spectra (acquired with same recycle delay of 4 sec in each case) were compared, the baseline of CPMG spectrum was found to be close to zero compared to 1D-NOESY for which the baseline was slightly elevated along 0.8 to 4.4 ppm. Also for 1D CPMG spectra, the baseline position w.r.t. to zero was almost invariable for T2 filter time varied from 21.2 ms to 106 ms in steps of 21.2 ms.

Comments: Based on the spectra comparison demonstrated in the image, the 1D ¹H-CPMG experiment has been decided to be used for further metabolomics studies involving ultra-filtered SF samples.