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Separation of Cross-Relaxation and Exchange in Two-Site Spin Systems with Weak Spin-Spin Couplings

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Abstract

A ratio relating the cross-relaxation rates, rate constants, and cross-peak and diagonal peak integrals is used for the analysis of exchanging two-site spin systems with weak scalar spin-spin couplings to extract the rate constants and cross-relaxation rates contributing to the same cross-peaks in two-dimensional nuclear Overhauser enhancement spectra (2-D NOESY). The method to separate contributions from cross-relaxation and chemical exchange into the cross-peaks in NOESY spectra was applied to investigate the intramolecular dynamics of trisulfide 4H,8H-naphtho[1,8-ef]1,2,3-trithiocine in solutions.
