Multidimensional NMR

Schedule:

Week 1: Introduction. Overview of basic NMR concepts and spectral parameters.

Week 2: Limitations of one-dimensional NMR spectra; fundamentals of two-dimensional NMR experiments.

Week 3: 2D 1H–1H correlation spectroscopy (COSY).

Week 4: 2D 1H–1H total correlation spectroscopy (TOCSY).

Week 5: 2D 1H–1H nuclear Overhauser effect spectroscopy (NOESY, ROESY).

Week 6: Analysis of homonuclear 2D NMR spectra.

Week 7: Heteronuclear one-bond 2D NMR methods (HSQC, HMQC).

Week 8: Heteronuclear multiple-bond 2D NMR methods (HMBC, HSQMBC).

Week 9: Applications of combined heteronuclear 2D NMR techniques (HSQC-TOCSY, HSQC-CLIP-COSY) in modern structural research.

Week 10: Structure verification and elucidation of small and medium-sized molecules through detailed evaluation of 2D NMR spectra.

Week 11: Structure verification and elucidation of small and medium-sized molecules through detailed evaluation of 2D NMR spectra.

Week 12: Structure verification and elucidation of small and medium-sized molecules through detailed evaluation of 2D NMR spectra.