

Chemistry 416, Dr. Glaser
INEPT NMR Spectroscopy II

Selective INEPT

An interesting variant of the INEPT experiment involves a soft, that is, selective pulse on a single proton so that the ^{13}C signals appear only for those carbons that are coupled to the irradiated proton. The method is of particular interest if the delays are optimized to a long-range $J(\text{C},\text{H})$ coupling so that quaternary carbons can be identified. Vanillin is an example.

How does the selective INEPT help to differentiate between C3 and C4? Comment on the signals of C1 and C6 in the two spectra.

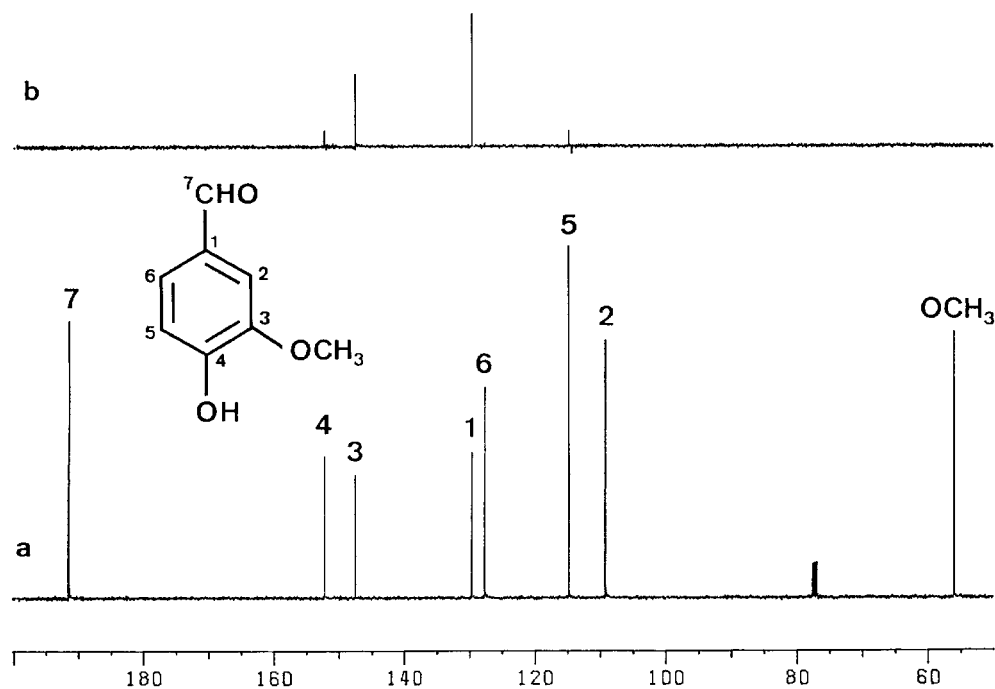


Fig. 2.2.2.a. ^1H broadband decoupled ^{13}C NMR spectrum of vanillin; b selective INEPT experiment with ^1H pulse on H-5, optimized to $^nJ_{\text{CH}} = 8$ Hz.