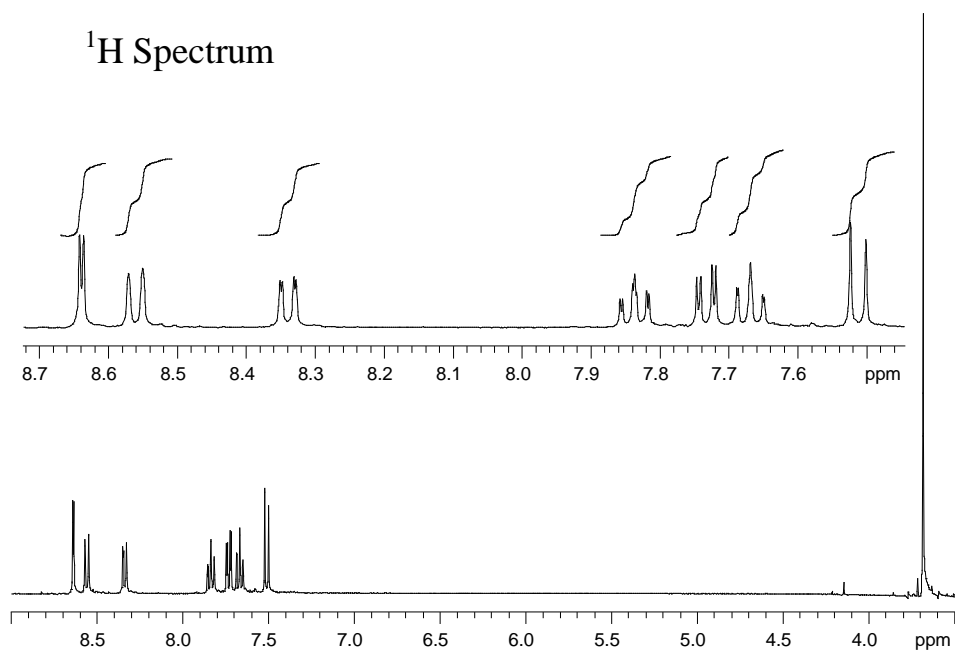
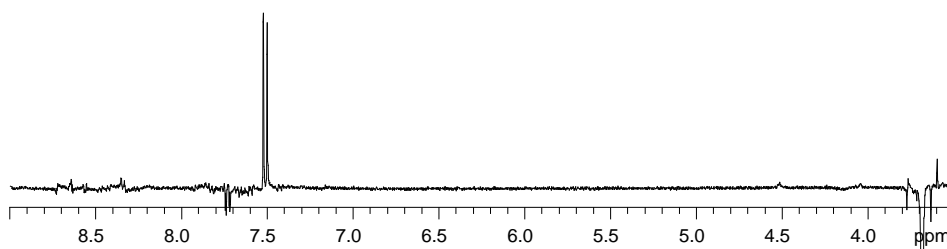
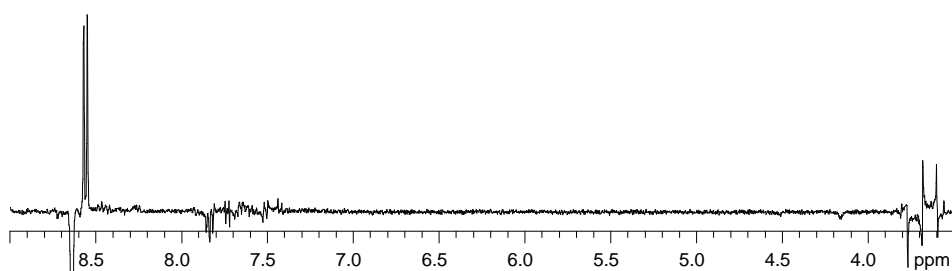


A chemist is unsure whether the product of their reaction is Isomer A or Isomer B. The 400MHz ^1H NMR spectrum is shown below. In the aryl region of the spectrum (7-9 ppm), only the signal at 8.64 ppm does not show ortho- (3-bond) ^1H - ^1H coupling (7-10Hz). Two nuclear Overhauser enhancement (nOe) difference spectra were obtained, irradiating at 3.7 ppm in one and at 8.64 ppm in the other. The results are shown overleaf, with the irradiated peaks truncated for display purposes. Finally, a ^1H - ^1H correlation spectrum (COSY) of the aryl region was also obtained, and is shown overleaf. Use the information provided to fully assign the ^1H spectrum, and thereby identify which isomer was made.





nOe difference irradiating at 3.7 ppm



nOe difference irradiating at 8.64 ppm

^1H COSY

