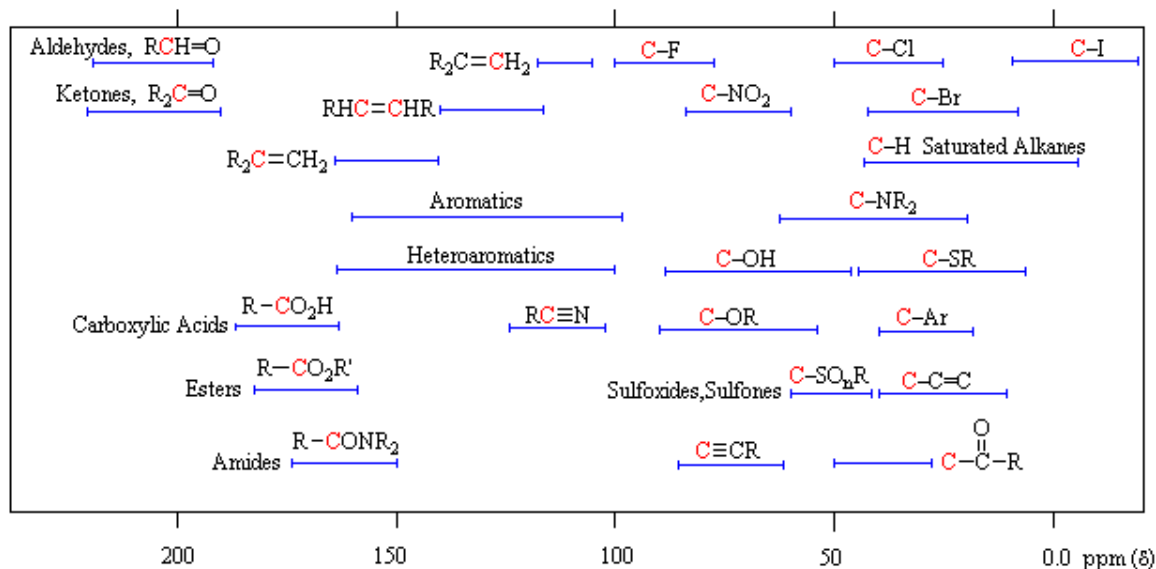


Quiz 5



1. Draw the chemical structure of pyruvate and acetyl-CoA (abbreviate the cofactor structure).
2. If you wanted to monitor the reaction catalyzed by pyruvate dehydrogenase with ¹³C NMR, which position would you label in pyruvate?
It is easiest to label C1 of pyruvate.
3. Describe what you expect to observe (including chemical shift values) as the reaction progresses from 100% pyruvate to 100% acetyl-CoA.
At the beginning of the reaction, a strong signal at 160-180 ppm would be present. As the reaction progresses, C1 is released as CO₂ which diffuses/equilibrates into/with the atmosphere. The signal between 160-180 ppm would decay away.