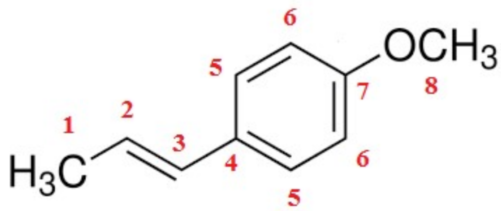
Anethole



Atom	^{1}H Chemical Shift	^{13}C Chemical Shift
1	1.813 (doublet)	18.200
2	5.892 – 6.239	123.810
3	5.892 – 6.239	130.334
4	n/a	130.696
5	7.134 – 7.258	126.777
6	6.726 – 6.854	113.775
7	n/a	158.529
8	3.701 (singlet)	54.974

The protons at 1 and 8 are easiest to assign. The protons at 1 are split by 2 into a doublet. The proton at 8 is appears as a singlet and is shifted downfield due to proximity to the oxygen atom. The corresponding carbon atoms are assigned through the heteronuclear correlation.

For protons at 2 and 3, proton 3 should appear as simple doublet (split by 2) and should appear further downfield. Proton 2 and is split by both 1 and 3 and will appear more complex. Unfortunately, these protons were overlapped. However, the carbon atoms could be assigned via the heteronuclear correlation.

Two multiplets are observed the aromatic region of the spectrum due to 5 and 6; the one shifted further downfield is assigned to 5 since it is *meta* to the oxygen atom. The corresponding carbon atoms were assigned via the heteronuclear correlation.

Two carbon atoms did not show any correlations in the heteronuclear correlation spectrum; these can be assigned to 4 and 7. The one shifted further upfield was assigned to 7 due to proximity to the oxygen atom.