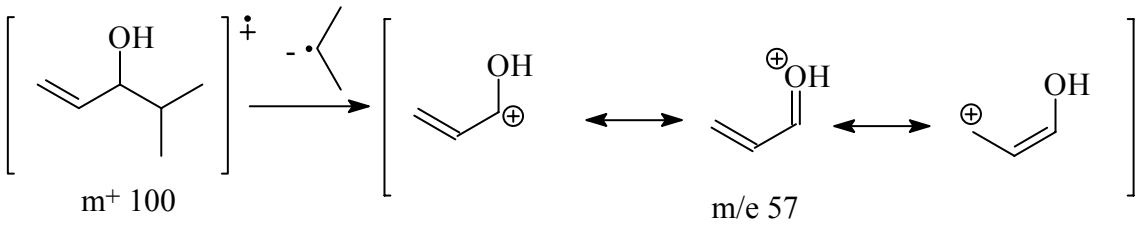
CHEM 242-601

Mass spectrometry matching answers

Spectrum 1) d
Spectrum 2) e
Spectrum 3) b
Spectrum 4) c
Spectrum 5) a

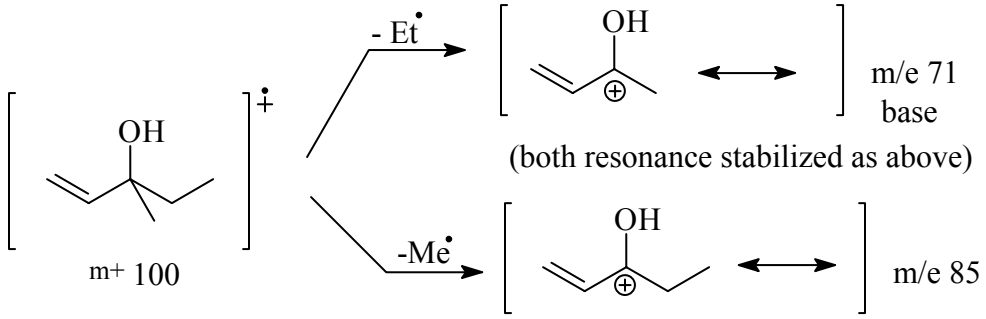
Spectrum 1)

M-43 (isopropyl radical) gives the allylic, resonance stabilized fragment for the base peak.



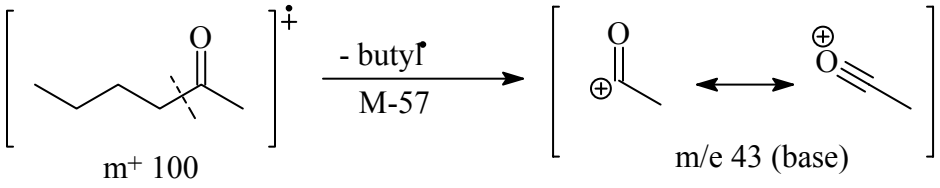
Spectrum 2)

M-29 gives the base peak at m/e 71. Also, a fairly significant M-15 at m/e 85.

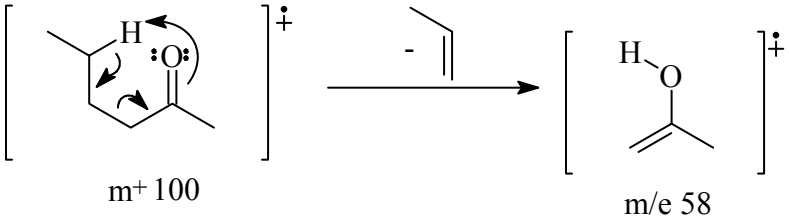


Spectrum 3)

Ketones will cleave α to the carbonyl (M-57) to give acyl ions. Also, it is very common for long chain carbonyl compounds to undergo McLafferty rearrangements shown below.

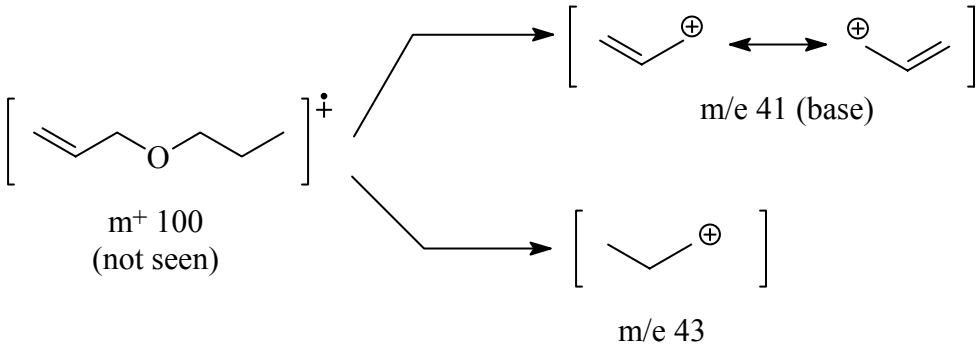


McLafferty Rearrangement



Spectrum 4)

Allyl propyl ether can fragment on either side of the oxygen to give m/e 41 and m/e 43 (allyl+ and propyl +).



Spectrum 5)

Cyclohexanol will dehydrate (lose H_2O) readily to give m-18 at m/e 82.