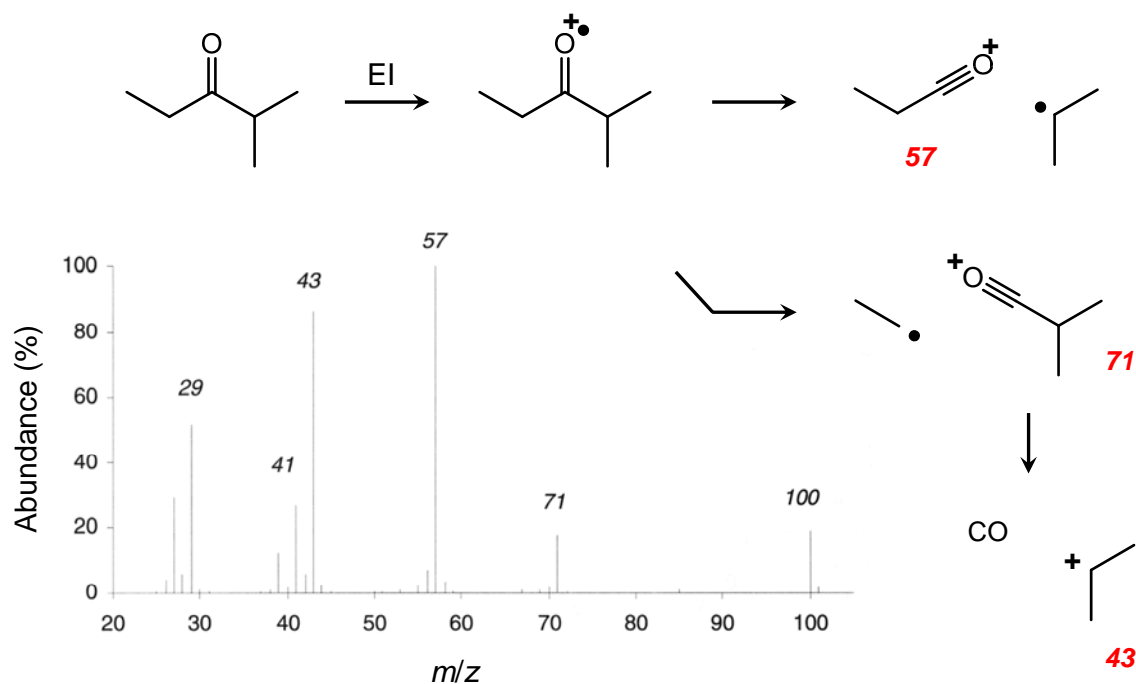
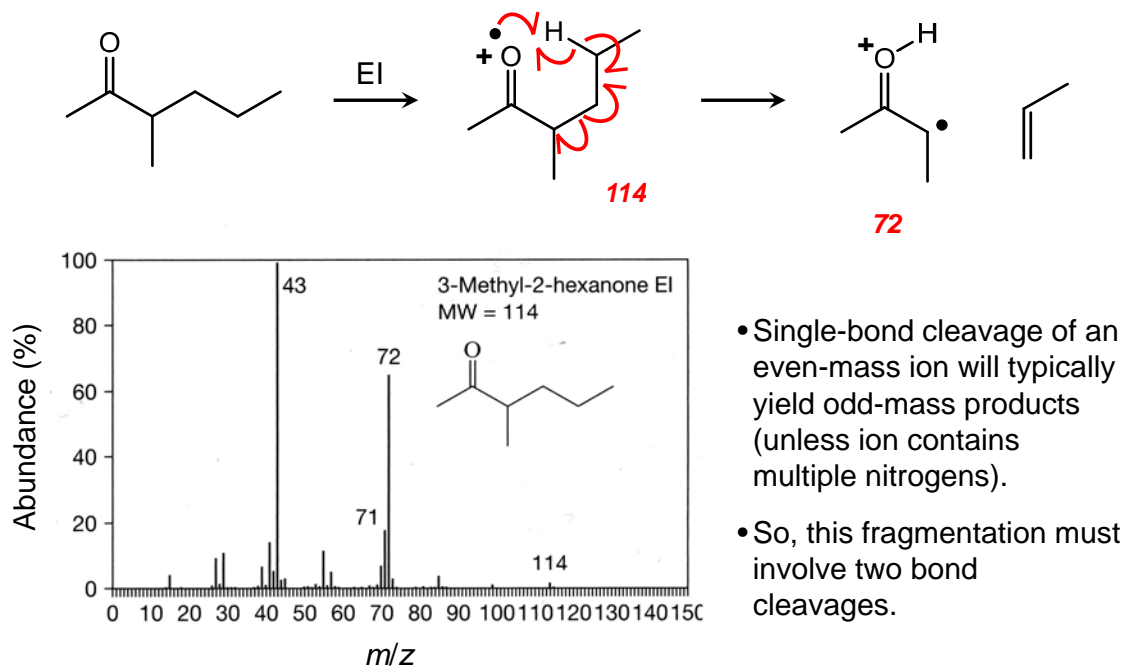


## $\alpha$ -Cleavage from Lone-Pair Ions Ketones

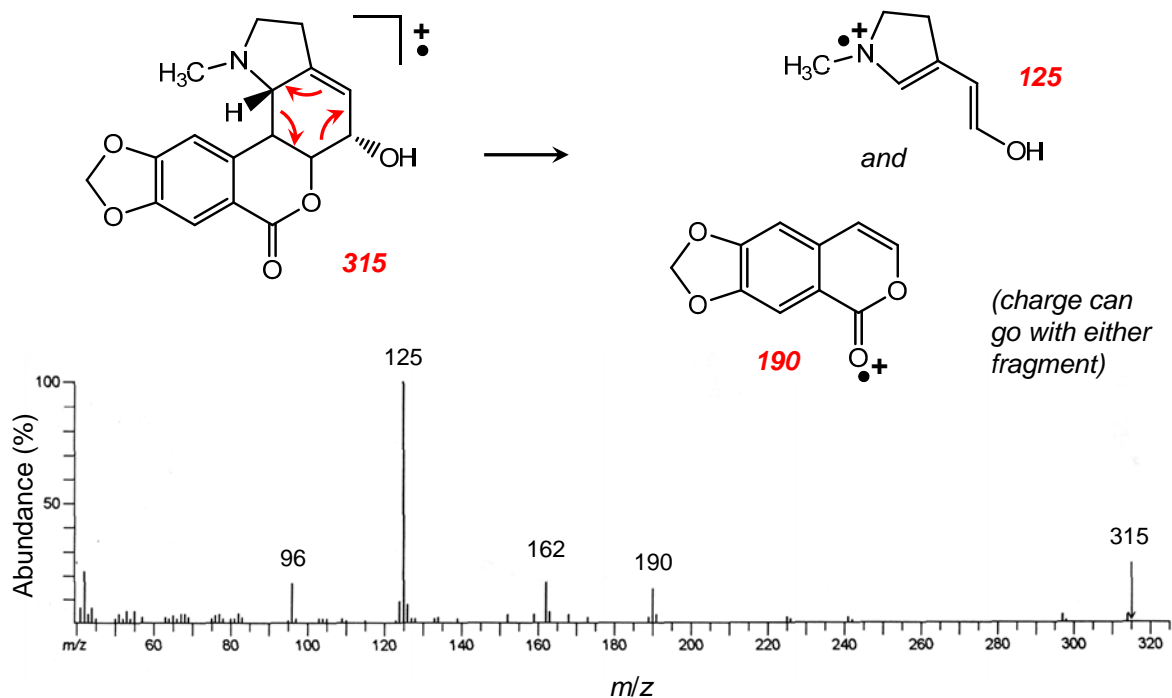


## McLafferty Rearrangement in Ketone Radical Cations



- Single-bond cleavage of an even-mass ion will typically yield odd-mass products (unless ion contains multiple nitrogens).
- So, this fragmentation must involve two bond cleavages.

## Retro-Diels Alder Fragmentation



## Other Fragmentation Mechanisms

$\sigma$ -cleavage:

