

## Preparation of saturated and unsaturated fatty acid hydrazides and long chain C-glycoside ketohydrazones.

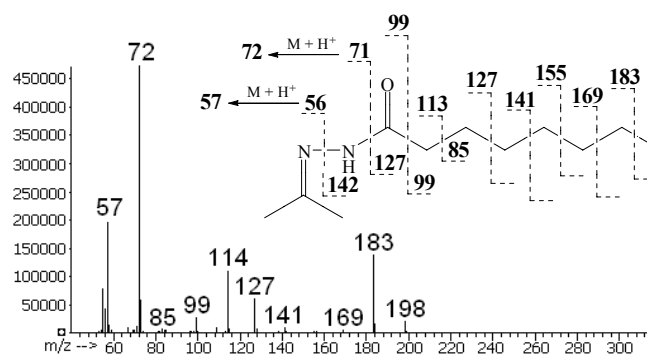
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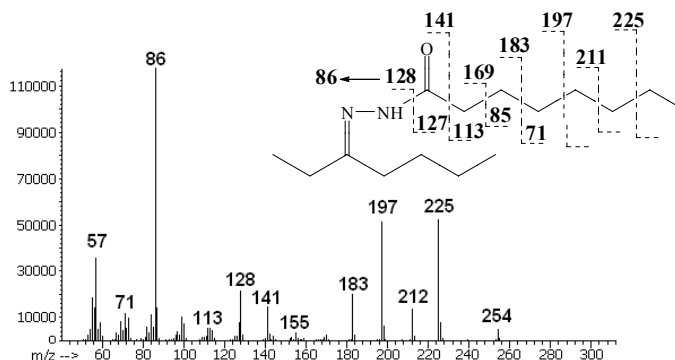
### Supplementary Data:-

**Electron impact mass spectrometry characterization of acyl hydrazides.** As shown in Supplementary Figure 1, the acetone hydrazone base peak at  $m/z$  72 is due to cleavage of the bond between nitrogen and the carbonyl group carbon accompanied with a proton transfer. Cleavage of the nitrogen-nitrogen bond, again accompanied with a proton transfer, gives rise to the peak at  $m/z$  57. Both the molecular ion peak  $[M]^+$  and molecular ion minus a methyl group  $[M - 15]^+$  are also observed.

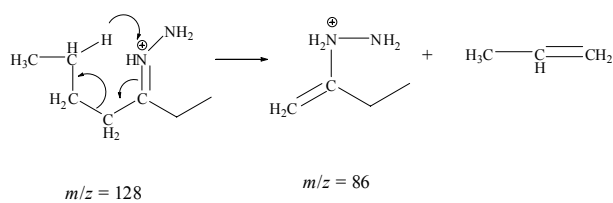


Supplementary Fig. S.1. EIMS fragmentation pathway for acetone hydrazone ( $m/z$  198) derived from caprylic hydrazone.

For the 3-heptanone hydrazone derivatives (Supplementary Figure S.2.) the  $m/z$  128 fragment develops from a neutral loss of the fatty acid acyl chain. This ion then undergoes a McLafferty rearrangement to give the base peak  $m/z$  86. The mechanism for the rearrangement is shown in Supplementary Scheme S.1. These ions were observed for all 3-heptanone derivatives and are consequently characteristic fragments for these compounds.



Supplementary Fig. S.2. EIMS fragmentation pathway for 3-heptanone hydrazone ( $m/z$  254) derived from caprylic hydrazone.



**Supplementary Scheme S. 1.** McLafferty rearrangement mechanism for the formation of  $m/z$  128 and  $m/z$  86 ions from electron impact MS of acyl hydrazones derivatized with 3-heptanone (see Supplementary Figure S.3.).

These EI fragmentation data of the acetone and 3-heptanone hydrazones therefore provides strong additional evidence for the structural assignment of the product acyl hydrazides.