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 hydrazide.

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 hydrazide.
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.