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Pyrolysis/GC-Mass Spectrometry Analysis for a Rapid Identification of Volatile Flavour Compounds of Cheddar Cheese

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Pyrolysis/Gas chromatography-mass spectrometry(Hewlet-Packard 5890GC/mass selective detector5971BMSD), interfaced to a CDS Pyroprobe 2000 was optimized for the rapid analysis of volatile flavour compounds in Cheddar cheese. 2~4mg of Cheese samples were directly introduced inside a quartz tube(0.33 mm thickness) and inserted in a coil probe. The temperature of the pyroprobe was set at 200℃ for 20s with the increment of heating rate of 50/ms. The pyroprobe interface temperature was set at 200℃ and that of capillary direct MS interface at 180℃, the ionization voltage was 70eV, and the electron multiplier was 1,682V, respectively with the mass range of 30~300amu. Twenty-one flavour compounds, including aldehydes, ketones, fatty acids, alcohols, and hydrocarbon, were identified from control Cheddar cheeses, Fifteen and nineteen compounds from accelerated-ripened Cheddar cheeses using extra- and intra-cellular proteolytic enzymes extracted from *Lactobacillus casei* LGY. Pyrolysis/GC/MS, which avoids formation of undesirable artifacts during pretreatment of samples was proved to be rapid and effective for the analysis of volatile flavour compounds in dairy products