

Hydrolysis of capsaicin using immobilized enzymes

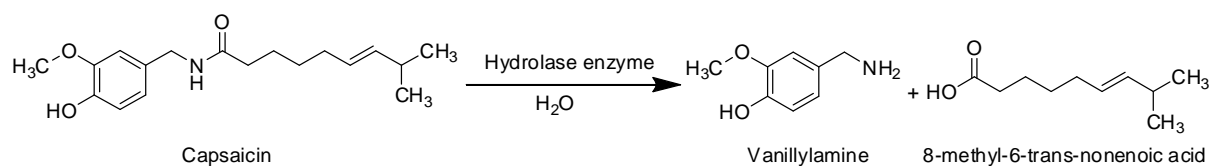
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Enzymes can be utilized as tools in chemical transformations offering high reactivity under mild conditions. The aim of this work is to develop a practical enzymatic hydrolysis of capsaicin to yield the medium chain 8-methyl-6-nonenic acid and to investigate the biological effects of this compound. Medium chain fatty acids are receiving a significant amount of attention due to their effects on biological systems. For example, they are believed to have an effect on lipid handling and thus could exhibit potential for weight control applications. Herein we report our initial results of this efforts. More than thirty commercially available preparations of lipase enzymes were screened using TLC monitoring. This set of enzymes included both free and immobilized (e.g. CLEA, enzymes adsorbed on a support, and enzymes covalently linked to a support) enzymes. Furthermore, an HPLC method for monitoring the hydrolysis progress has been developed, and enzyme preparations showing promising results in the first screen have been further tested. Effects of temperature, pH, and buffer concentration on the reaction progress have been investigated for the most promising candidates. The best results have been achieved with *Candida Antarctica* lipase B, which shows capsaicin conversion of up to 80% at pH 7.0 and 45°C.



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