

REFERENCE
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Production of γ -decalactone by the yeast *Yarrowia lipolytica* using different ricinoleic acid sources: comparison of different start-up strategies

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γ -Decalactone is a peach-like aroma compound well known in several food and beverages, reason why the food industry has a high interest in its biotechnological production. One of the better known applications is the bio-transformation of ricinoleic acid (RA) into γ -decalactone, catalysed by yeasts with GRAS status, since in this case a natural label is conferred to the aroma¹, which is important, considering the increasing health- and nutrition-conscious lifestyles².

RA is a hydroxylated C18 fatty acid that in its esterified form is the major constituent of castor oil, making it an abundant compound¹. In the present work, the yeast strain *Yarrowia lipolytica* W29 and RA sources of castor oil and methyl ricinoleate were used.

Two methodologies have been tested for the inoculation of the biotransformation medium with each substrate, including or not the common cell washing step. The higher global hydrophobicity of cells in non-washed cells essays, improved the overall process. Castor oil seemed to be a more appropriate substrate, leading to high γ -decalactone concentrations (\approx 2 g/L), but the productivity was small (10-14 mg/L/h). Work is now focused on the productivity improvement, by better understanding the all process, including the role of extracellular enzymes, such as lipases and proteases.

The novel start-up method allows a more efficient process since it removes the laborious/slow step of washing cells and higher product concentrations are achieved.

1. Schrader, J. et al. (2004) *Biotechnol. Lett.* **26**:463-472.

2. Krings, U. and Berger, R. G. (1998) *Appl. Microbiol. Biotechnol.* **49**:1-8.