

Formation of Aliphatic and Aromatic α -Hydroxy Ketones by *Zygosaccharomyces bisporus*

Frauke Neuser, Holger Zorn and Ralf G. Berger*

Institut für Lebensmittelchemie, Universität Hannover, Wunstorfer Straße 14,
D-30453 Hannover, Germany. Fax: 0049-511-7624547.
E-mail: rg.berger@mbox.lci.uni-hannover.de

* Author for correspondence and reprint requests

Z. Naturforsch. **55c**, 560–568 (2000); received February 22/March 10, 2000

Zygosaccharomyces bisporus, Acyloin Formation, Pyruvate Decarboxylase

The wild-type yeast strain *Zygosaccharomyces bisporus* CBS 702 produced α -hydroxyketones (acyloins) from amino acid precursors after transamination to the corresponding 2-oxo acids. The key enzyme of the subsequent decarboxylation and C–C bond forming reaction, pyruvate decarboxylase (PDC), was examined for its substrate- and stereo-specificity. A wide variety of saturated and unsaturated aliphatic and aromatic aldehydes was successfully converted to acyloins. 19 of the biotransformation products identified had not been reported as natural substances before. Product yields were strongly affected by substrate structure.