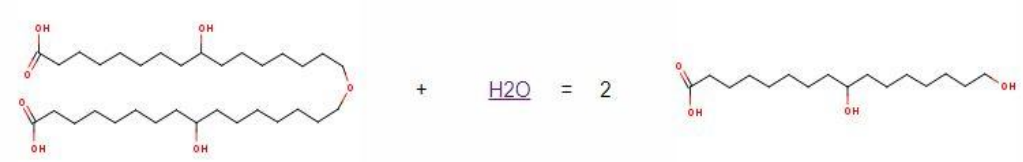
# Cutinase 2p

*E.C. 3.1.1.74*

Description: Enzyme preparation for the hydrolysis of cutin and other esters. Cutin (polyester of hydroxy and hydroxy-epoxy fatty acid) is cleaved into the corresponding monomers.

Catalysed reaction:




*Cutin* + *$H_2O$* → *2 Cutin Monomere*

Origin: *Arxula adeninivorans*

Application: Splitting of cutin, organis synthesis (see table 1)

Activity: > 60 000 U/ g
(Method: pH 7.0; 37°C, substrate: Glycerinetributyrate))

Specific activity: > 3 000 U/ mg Protein

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|---|---|---|
| Parameter: | pH | Optimum: 4 - 6<br>effective in the range of pH 3.5 - 8 |
| | Temperature | Optimum: 20 - 40°C<br>effective in the range of 5 – 60°C |

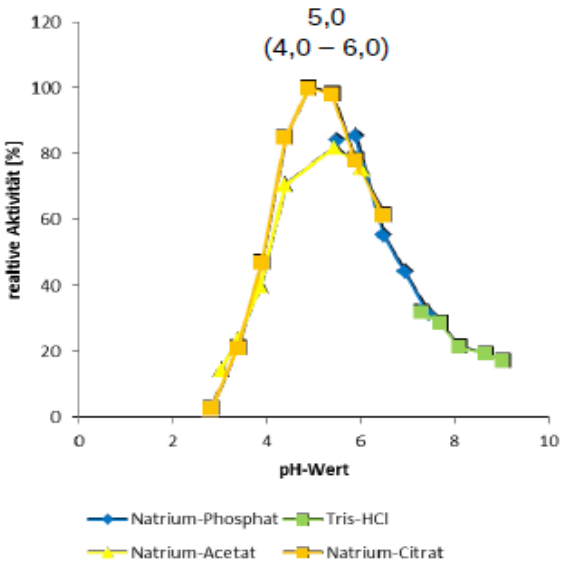


Image 1: pH-spectrum

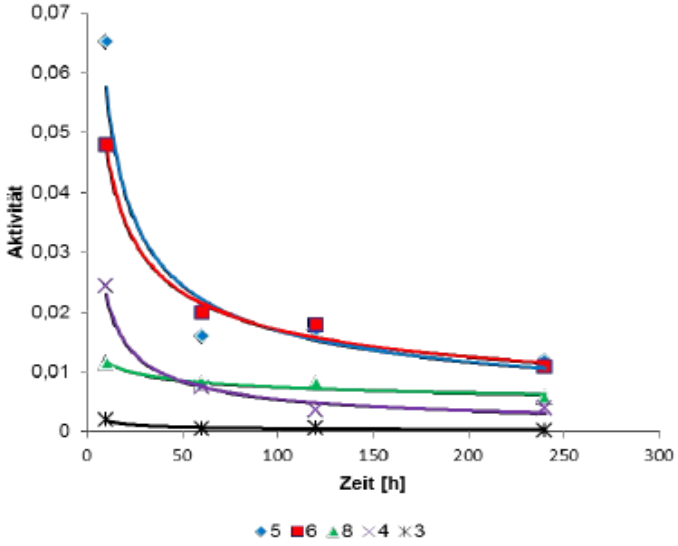


Image 2: pH-stability

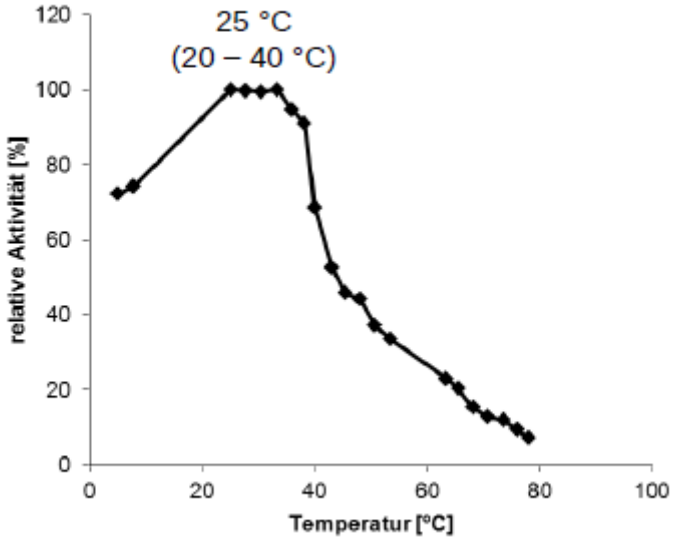


Image 3: Temperature-spectrum

Article-no.: 2465

Form of delivery: Partially purified lyophilizate

Stability: Stable at -20°C

Storage: – 20°C

**Table 1: Use of cutinases in bio catalysis**

(according to Carvalho et al., 1998b)

| Reaction | Substrate | Enzyme preparations/ reaction | Reference. |
|---|---|---|---|
| Hydrolysis | triolein | Reverse Micelles AOT/ isooctane | Melo et al., 1995b |
| | | triolein/ water | Flipsen et al., 1996 |
| | tricaprylin | Immobilization on zeolites | Gonçalves et al., 1996a |
| | | Calcium alginate | Gonçalves et al., 1995 |
| | | Covalent bonding on porous silicate | Gonçalves et al., 1996b |
| | p-nitrophenyl valerate | Micelles with SDS/ Triton X100 | Pocalyko and Tallman, 1998 |
| | p-nitrophenyl palmitate | Immobilization on dextran and silica-derivatives | Gonçalves et al., 1998a |
| | Methyl-,ethyl-, Propyl propionate | Gas/ solid phase system | Lamare et al., 1997 |
| Ester synthesis | oleic acid +hexanol | Reverse micelles AOT/ isooctane | Sebastiãoet al., 1993, Sebas tião et al., 1992 |
| | caprylic acid + butanol | Organic solvents | Sarazin et al., 1992, Sarazin et al., 1995 |
| | caprylic acid + butanol | Organic solvents | Sarazin et al., 1992, Sarazin et al., 1995 |
| | butanoic acid + 2-butanol | Phosphatidylcholine/ isooctane, reverse micelles | Pinto-Sousa et al., 1994 |
| | oleic acid + glycerin | Organic solvents | Melo et al., 1995a |
| | hexanoic acid + hexanol | CTAB, Reverse micelles | Cunnah et al., 1996 |
| | | Immobilization on Accurel EP 100 | Sereti et al., 1997 |
| | butanoic acid + hexanol | Immobilization on Accurel EP 100 | Sjursnes et al., 1998 |
| | lauric acid + pentanol | Reverse micelles AOT/ isooctane | Papadimitriou et al.,1996 |

| | | | |
|---|---|---|---|
| Transesterification | methyl propionate + propanol | Gas/ solid phase system | Lamare and Legoy, 1995, Lamare et al., 1997 |
| | butyl acetate + hexanol | Reverse micelles AOT/ isooctane | Carvalho et.al 1997a, Carvalho et al., 1998a |
| | | Reverse micelles CTAB/ isooctane | Cunnah et al., 1996 |
| | | Immobilization on zeolites | Serralha et al., 1998 |

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