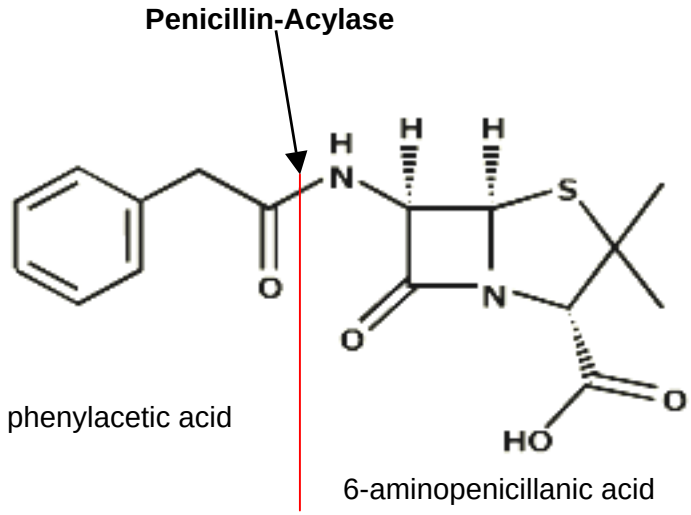
Penicillin - Acylase

Penicillin amidohydrolase
EC 3.5.1.11

Description: Cleavage of Penicillin G into 6-aminopenicillanic acid (6-APA) and phenylacetic acid.
Synthesis of unnatural penicillin by coupling 6-aminopenicillanic acid with a selected side chain (e.g. Methylcillin, Ampicillin, Phenethicillin)

Reaction:



Penicillin G

Origin: *E.coli*

Application: semi-synthetic production of several penicillins

Michaelis-M.-Const.: $2 \cdot 10^5$ M

Activity: > 800 U/ml (method: ASA Spezialenzyme GmbH)

Specific activity: > 4 U/mg

Molecular weight: 70 000 D (by gel filtration)

ASA Spezialenzyme GmbH
Am Exer 19 C
38302 Wolfenbüttel
Germany

phone.: +49 (0)5331 8825-30
fax: +49 (0)5331 8825-32

e-mail: service@asa-enzyme.de
www.asa-enzyme.de

Isoelectric points:	6.7 – 6.8 and 6.3 – 6.4 (by preparative isoelectric focusing)
Parameters of reaction:	pH hydrolysis of 6-nitro-3-(phenylacetoamid)bezoic acid: 7,5 hydrolysis of Penicillin G: 8,1
	temperature optimum 54°C
Inhibitors:	phenylacetic acid (competitive, K_I = 200 mM) 6-aminopenicillanic acid (not competitive, K_i = 15 mM) *conditions: Penicillin G as substrate, 25°C, pH 8,1*
Order-No.:	2605
Form of delivery:	yellow - brown liquid with typical odour
Storage:	-20°C
Stability:	At -20°C the enzyme is stable for years. For months stable at pH 5 - 8 and at ambient temperature. Fast loss of activity after treatment with organic solvents as well as after lyophilisation. An incubation for 20 minutes at pH 5 and 50°C does not lead to a loss of activity.

Literature:

Kutzbach C., Rauenbusch E.: *Hoppe-Seyler´s Z. Physiol. Chem.* 354, 45 (1974)

Mahajan P. B.: *Appl. Biochem. and Biotechn. Vol. 9.* 537 (1984)

Savidge T. A., Cole: *M. in Methods in Enzymology Vol. 43.* 705, Academic Press, New York – London (1975)

ASA Spezialenzyme GmbH
Am Exer 19 C
38302 Wolfenbüttel
Germany

phone.: +49 (0)5331 8825-30
fax: +49 (0)5331 8825-32

e-mail: service@asa-enzyme.de
www.asa-enzyme.de