

PRODUCT DATA SHEET



BACE-1 (human, recombinant)
(EC 3.4.23.46)

CATALOG NO.: SE-531

LOT NO.: Temp

DESCRIPTION: MW 45 kDa by SDS-PAGE. Active soluble BACE-1 (beta-site APP-cleaving enzyme-1, memapsin-2, Asp 1) expressed in *E. coli*^{1,2} as proenzyme (Genebank Accession # NM_012104), purified, activated at Arg45-Glu46 with clostripain, and repurified to yield fully mature enzyme with an amino terminus of ETDEEPE. BACE-1 is an aspartic protease involved in Alzheimer's disease^{3,4} and cancer⁵.

PURITY: >90% by SDS-PAGE.

SPECIFIC ACTIVITY: 1.6 nmol/min/mg, when 0.5 µg/µl BACE-1 is used to cleave 16 µM Abz-Val-Asn-Leu-Asp-Ala-Glu-EDDnp in 20 mM NaOAc pH 4.5, 10 mM NaCl, 3% glycerol at 27°C. Arg56Thr and Arg57Thr, which prevent secondary cleavage by clostripain just downstream from the activation site, do not affect catalytic activity.

USAGE: Study enzyme kinetics, cleave target substrates, and screen for inhibitors^{1,2}.

SUPPLIED AS: 50 µg human BACE-1 at 0.5 µg/µl in 20 mM Tris-HCl, pH 8.0, 50 mM urea, 25 mM imidazole, 0.5 mM EDTA, 3% glycerol.

STORAGE: -80°C. The enzyme is stable on ice for several hours. However, it is recommended that thawing and dilution of the enzyme be done within as short a time as possible before start of the assay. After initial defrost, aliquot product into individual tubes and refreeze at -80°C. Avoid repeated freeze/defrost cycles.

NOTE: When stored under the above conditions, this enzyme is stable at the concentration supplied, in its current storage buffer. Procedures such as dilution of the enzyme followed by refreezing could lead to loss of activity.

REFERENCES:

1. V. Sardana *et al.* *Protein Expr. Purif.* 2004 **34** 190
2. D.C. Cole *et al.* *J. Med. Chem.* 2006 **49** 6158
3. I. Hussain *et al.* *J. Neurochem.* 2007 **100** 802
4. D.Y. Kim *et al.* *Nat. Cell Biol.* 2007 **9** 755
5. D. Paris *et al.* *Eur. J. Pharmacol.* 2005 **514** 1

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