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N-Acetyl-DL-phenylalanine β-naphthyl ester

Cat. No.: HY-W141825

CAS No.: 20874-31-1

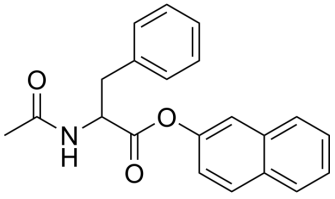
Molecular Formula: $C_{21}H_{19}NO_3$

Molecular Weight: 333.38

Target: Fluorescent Dye

Pathway: Others

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	N-Acetyl-DL-phenylalanine β-naphthyl ester is an aromatic amino acid ester, which functions as a chromogenic substrate for chymotrypsin and microbial serine proteases such as subtilisin[1].
In Vitro	N-Acetyl-DL-phenylalanine β-naphthyl ester is hydrolyzed in the body by the esterase (APNEase) catalytic action at neutral pHs. APNEase level involves with many muscle wasting conditions suggest the possibility that it may be involved in the turnover and pathological breakdown of muscle proteins[1]. N-Acetyl-DL-phenylalanine β-naphthyl ester (0.75 mM, DMF; 3 min) as substrate and o-Dianisidine tetrazotized (oD) as the dye, allow the assessment of protease inhibitory activity directly from the yeast P. pastoris expression media[2]. N-Acetyl-DL-phenylalanine β-naphthyl ester (0.75 mM, DMF; 3 min) (2.4 g/L) provides a visualization result with stained agar gel via the diazo coupling of the β-naphtol produced by the enzymatic hydrolysis of N-Acetyl-DL-phenylalanine β-naphthyl ester (APNE). Circular zones containing inhibitor-proteinase complexes remain coloress while the region containing only proteinase shows a bright pink-purple color[3]. N-Acetyl-DL-phenylalanine β-naphthyl ester (5 mg/40 mL) has application: determine the class of peptidase in mouse plasma. The enzyme was displayed by immunoprecipitation with antiserum in radial immunodiffusion. After removal of non-precipitated serum and other constituents by washing in excess saline, individual rings of immunoprecipitate were incubated in a solution of a protease inhibitor, followed by washing and staining with the chromogenic substrate (NAPBNE and fast blue B), the picture can be photographed over direct lighting[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Kar NC, et al. Acetyl-DL-phenylalanine beta-naphthyl esterase activity in human muscle disease. Biochem Med. 1978 Aug. 20(1):63-9.

[2]. Yakoby N, et al. A simple method to determine trypsin and chymotrypsin inhibitory activity. J Biochem Biophys Methods. 2004 Jun 30. 59(3):241-51.

[3]. Kourteva I, et al. Assay for enzyme inhibition: detection of natural inhibitors of trypsin and chymotrypsin. Anal Biochem. 1987 May 1. 162(2):345-9.

[4]. Darani HY, et al. An association between Schistosoma mansoni worms and an enzymatically-active protease/peptidase in mouse blood. Parasitology. 2008 Apr. 135(4):467-72.

[5]. P Tsung, et al. Isolation of an N-acetyl-DL-phenylalanine beta-naphthyl esterase from rabbit peritoneal polymorphonuclear leukocytes. Biochim Biophys Acta. 1975 Sep 22;403(1):98-105.

Caution: Product has not been fully validated for medical applications. For research use only.

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