

Product Information

N-Succinyl-Ala-Ala-Ala-p-nitroanilide

Elastase substrate

S4760

Product Description

CAS Number: 52299-14-6

Synonyms: N-Succinyl-tri-L-alanine 4-nitroanilide, N-Succinyl-L-alanyl-L-alanyl-L-alanine 4-nitroanilide, Suc-Ala-Ala-Ala-pNA, Suc-A-A-A-pNA, Suc-Ala3-pNA

Molecular Weight: 451.43

Molecular Formula: C₁₉H₂₅N₅O₈

The peptide N-Succinyl-Ala-Ala-Ala-p-nitroanilide (Suc-Ala-Ala-Ala-pNA) is routinely used to assay elastase activity.^{1,2} This assay is highly reproducible and like many colorimetric assays, can be run in thirty minutes or less. Older and more complicated assays used another substrate, Elastin-Orcein (Catalogue Number E1500). The conversion factor for pancreatic elastase activity using these two substrates may be stated as follows:

1 Suc-Ala₃ unit ~ 30 Elastin-Orcein units

The buffers and solvents used in these assays can affect the substrate results.³ Suc-Ala-Ala-Ala-pNA may be used for assays of other enzymes, such as alkaline proteases.⁴

Several publications,⁵⁻⁸ theses,^{9,10} and dissertations¹¹⁻²⁰ have cited use of product S4760 in their protocols.

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

This product should be stored at 2-8 °C.

Solubility

This product is tested for solubility in DMF at 25 mg/mL.

Various publications cite preparation of stock solutions of this material in DMSO, at 10 mM¹⁸ and at 200 mM,¹⁹ although we have not tested solubility in DMSO ourselves. Stock solutions of this material in DMSO may be stored in aliquots at -20 °C, although we have not ourselves tested solution stability of this material.

Usage

This product has been used as a substrate to determine the activity of leukocyte elastase.² In this assay:

- 25 µL of the enzyme solution was added to 1.8 mL of the substrate solution in 0.1 M HEPES buffer (pH 7.5), containing 0.5 M NaCl and 10% DMSO at 25 °C.
- The rate of substrate hydrolysis (the formation of p-nitroaniline) was measured at 410 nm at pH 7.5.

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