

Product Information

D-Val-Leu-Lys 4-Methoxy-2-naphthylamide

Product Number **V3263**

Storage Temperature $-20\text{ }^{\circ}\text{C}$

Product Description

Molecular formula: $\text{C}_{28}\text{H}_{43}\text{N}_5\text{O}_4$

Mol wt.: 513.7

D-Val-Leu-Lys 4-methoxy-2-naphthylamide (D-VLK-MNA) is a fluorogenic substrate suitable for the assay of tissue plasminogen activator. This substrate has also been used for histochemical localization of esteropeptidases in rat submandibular gland. It has a more narrow activity spectrum than the substrate N-acetyl-L-methionine, α -naphthylester (α -N-O-met).¹

When D-VLK-MNA is hydrolyzed, the free MNA produced in the reaction can be quantified by fluorometric detection (excitation 340 nm, emission 425 nm). MNA can also be detected by colorimetric procedures because it couples with azo compounds to give a red color product (525 nm).² MNA also couples with 5-nitrosalicylaldehyde to give a yellow to orange fluorescent product for acid proteases.^{3,4}

Tissue plasminogen activator (t-PA) is a fibrinolytic serine protease that converts plasminogen to plasmin, which, in turn, dissolves fibrin. t-PA plays a key role in the regulation of intravascular thrombolysis.

D-VLK-MNA may also be suitable for other serine proteases with the same peptide recognition sequence.

D-VLK-MNA is supplied as the trifluoroacetate salt.

Preparation Instructions

Prepare stock 20 mM solutions in dry ($\geq 99.9\%$) DMSO. Product is also soluble in DMF.

Storage/Stability

Store at $-20\text{ }^{\circ}\text{C}$. Material stable for at least one year, when stored as recommended.

Store stock solutions in frozen aliquots at $-20\text{ }^{\circ}\text{C}$. Allow the material to warm to room temperature before use to ensure stability.

References

1. Arnold, W. H., et al., A 4-methoxy-2-naphthylamide substrate for the histochemical localization of esteropeptidases in the submandibular gland of the rat. *Histochem. J.*, **15**, 139-46 (1983).
2. Johansen, H. T., et al., Colorimetric and fluorimetric microplate assays for legumain and a staining reaction for detection of the enzyme after electrophoresis. *Anal. Biochem.*, **273**, 278-283 (1999).
3. Smith, R. E., et al., The evolution of proteinase substrates with special reference to dipeptidylpeptidase IV. *Histochem. J.*, **24**, 637-47 (1992).
4. Arnold, W. H., Comparative studies on the localization of esteropeptidases and kallikrein-like activity in primate organs. *Histochem. J.*, **16**, 755-69 (1984).

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