

(Z-DEVD)₂-R110**Ordering Information**

Product Number: 13430 (1 mg)

Storage Conditions

Store at -20 °C

General Properties

Molecular Weight: 1515.44
Sequence: [Z-Asp-Glu-Val-Asp]₂-R110
Maximum excitation: 498nm
Maximum Emission: 520 nm
Solvents: DMSO

Biological Applications

R110-derived caspase substrates are probably the most sensitive indicators widely used for the fluorimetric detection of various caspase activities. This R110 substrate is specific for caspases 3 and 7. Caspases play important roles in apoptosis and cell signaling. The activation of Caspase 3/7 (CPP32/apopain) is important for the initiation of apoptosis. Caspase 3/7 is also identified as a drug-screening target. Caspase inhibitors have anti-cancer and other pharmacological potentials. It has been proven that Caspase 3/7 has substrate selectivity for the peptide sequence Asp-Glu-Val-Asp (DEVD). Cleavage of R110 peptides by caspases generates strongly fluorescent R110 that can be monitored fluorimetrically at 510-530 nm with excitation of 488 nm, the most common excitation light source used in fluorescence instruments.

Sample Protocol

1. Make a **10 mM stock solution** by adding 65 µL of DMSO into the vial of 1 mg (Z-DEVD)₂-R110.
2. Prepare **2X Caspase 3/7 assay solution** as the following:
50 µL (Z-DEVD)₂-R110 stock solution (10 mM)
100 µL DTT (1M)
400 µL EDTA (100 mM)
10 mL Tris Buffer (20 mM), pH =7.4
3. Mix equal volume of the caspase3/7 standards or samples with 2X caspase 3/7 assay solution, and incubate at room temperature for at least 1 hour.
4. Monitor the fluorescence increase at Ex/Em = 490/525 nm.

References

1. N. A. Thornberry and Y. Lazebnik, *Science* 281, 1312-1316 (1998).
2. J. C. Reed, *J.Clin.Oncol.* 17, 2941-2953 (1999).
3. Y. A. Lazebnik, S. H. Kaufmann, S. Desnoyers, G. G. Poirier, W. C. Earnshaw, *Nature* 371, 346-347 (1994).
4. P. Villa, S. H. Kaufmann, W. C. Earnshaw, *Trends Biochem.Sci.* 22, 388-393 (1997).
5. Y. Liu et al., *Anal.Biochem.* 267, 331-335 (1999).
6. M. Fennell, H. Chan, A Wood. *J Biomol Screen*, 11, 296 (2006)
7. X. Wu, J. Simone, D. Hewgill, R. Siegel, PE. Lipsky, L. He. *Cytometry A*, 69, 477 (2006)

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