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Product Information

Z-Leu-Leu-Leu Fluoromethyl Ketone

Product Number **C8984**

Storage Temperature -20°C

Product Description

Molecular formula: $\text{C}_{27}\text{H}_{42}\text{FN}_3\text{O}_5$

Molecular weight: 507.6

Z-Leu-Leu-Leu Fluoromethyl Ketone (Z-LLL-FMK, Z = benzyloxycarbonyl) is an irreversible inhibitor of proteasome-associated proteolytic activity.

Degradation of short-lived proteins is reversibly inhibited by peptide aldehyde inhibitors of proteasomes, such as Z-Leu-Leu-Leu-CHO.

Heat-shock protein 90 (Hsp 90) has been implicated in protection against inhibition of the multicatalytic proteinase (MCP, also known as 20 S proteasome). Hsp 90 inhibits the Z-Leu-Leu-Leu-MCA hydrolyzing activity (MCA = 7-amino-4-methylcoumarin) when the rat liver MCP is in its latent form, but no inhibitory effects are observed when the MCP is in its active form.³

FMK is a trapping group responsible for irreversible inhibition but is non-cytotoxic. Inhibition occurs when the FMK group covalently bonds to the $-\text{SH}$ of an adjacent cysteine residue on the target protein.

Preparation Instructions

Prepare stock 20 mM solutions in dry ($\geq 99.9\%$) DMSO to maintain product stability. DMF has also been used.

Storage/Stability

Store at -20°C

Store stock solutions at -20°C for 6-8 months. Allowing the material to warm to room temperature before use to ensure stability.

References

1. Lee, D.H., et al., Selective inhibitors of the proteasome-dependent and vacuolare pathways of protein degradation in *Saccharomyces cerevisiae*. J. Biol. Chem., **271**, 27280-27284 (1996).
2. Rock, K.L., et al., Inhibitors of the proteasome block the degradation of most cell proteins and the generation of peptides presented on MHC class I molecules. Cell, **78**, 761 (1994).
3. Conconi, M., et al., Protection from oxidative inactivation of the 20S proteasome by heat-shock protein 90. Biochem. J., **333**, 407-415 (1998).

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