

PRODUCT INFORMATION



L-Leucyl-L-Leucine methyl ester (hydrochloride)

Item No. 16008

CAS Registry No.: 6491-83-4

Formal Name: L-leucyl-L-leucine, methyl ester, monohydrochloride

Synonyms: LLME, LLOMe

MF: $C_{13}H_{26}N_2O_3 \cdot HCl$

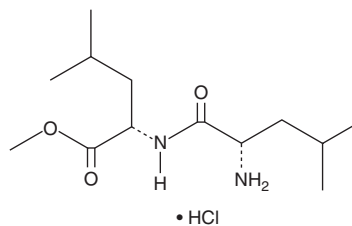
FW: 294.8

Purity: $\geq 95\%$

Supplied as: A crystalline solid

Storage: $-20^{\circ}C$

Stability: As supplied, 2 years from the QC date provided on the Certificate of Analysis, when stored properly



Laboratory Procedures

L-leucyl-L-leucine methyl ester (LLME) (hydrochloride) is supplied as a crystalline solid. A stock solution may be made by dissolving the LLME (hydrochloride) in the solvent of choice. LLME (hydrochloride) is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of LLME (hydrochloride) in ethanol and DMSO is approximately 30 mg/ml and approximately 10 mg/ml in DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of LLME (hydrochloride) can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of LLME (hydrochloride) in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

LLME is a lysosomal condensation product that has been reported to be cytotoxic towards natural killer cells and $CD4^{+}$ and $CD8^{+}$ T lymphocytes without affecting helper T cells and B cells.¹⁻² It has also been shown to induce death of monocytes, polymorphonuclear leukocytes, and myeloid tumor cells.² Upon entry into cells *via* receptor-mediated endocytosis, LLME undergoes a condensation process catalyzed by dipeptidyl peptidase I (DPPI) in lysosomes. This condensation leads to lysosomal rupture and DNA fragmentation in DPPI-expressing immune cells such as cytotoxic T cells and natural killer cells.²

References

- Ohlin, M., Danielsson, L., Carlsson, R., *et al.* The effect of leucyl-leucine methyl ester on proliferation and Ig secretion of EBV-transformed human B lymphocytes. *Immunology* **66**(4), 485-490 (1989).
- Thiele, D.L. and Lipsky, P.E. Mechanism of L-leucyl-L-leucine methyl ester-mediated killing of cytotoxic lymphocytes: Dependence on a lysosomal thiol protease, dipeptidyl peptidase I, that is enriched in these cells. *Proc. Natl. Acad. Sci. USA* **87**(1), 83-87 (1990).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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