

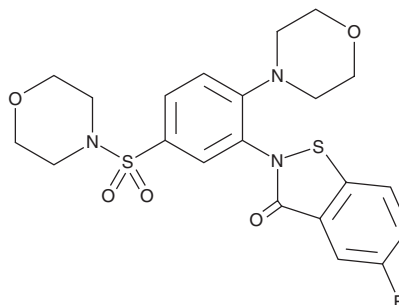
PRODUCT INFORMATION



ML-345

Item No. 17633

CAS Registry No.: 1632125-79-1
Formal Name: 5-fluoro-2-[2-(4-morpholinyl)-5-(4-morpholinylsulfonyl)phenyl]-1,2-benzisothiazol-3(2H)-one
MF: C₂₁H₂₂FN₃O₅S₂
FW: 479.5
Purity: ≥95%
UV/Vis.: λ_{max}: 225, 265 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

ML-345 is supplied as a crystalline solid. A stock solution may be made by dissolving the ML-345 in the solvent of choice, which should be purged with an inert gas. ML-345 is soluble in organic solvents such as DMSO and dimethyl formamide (DMF). The solubility of ML-345 in these solvents is approximately 1 and 5 mg/ml, respectively.

ML-345 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, ML-345 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. ML-345 has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Insulin-degrading enzyme (IDE) is a thiol-sensitive zinc-metalloproteinase that acts as the major insulin-degrading protease *in vivo*, mediating the termination of insulin signaling.¹ In addition to regulating insulin action in diabetes pathogenesis, IDE plays a role in Varicella-Zoster virus infection and degradation of amyloid-β, a peptide implicated in Alzheimer's disease. ML-345 is a small molecule inhibitor that selectively targets cysteine⁸¹⁹ in IDE with an EC₅₀ value of 188 nM.² It demonstrates 10-fold selectivity for IDE over a panel of enzymes with reactive cysteine residues.²

References

1. Maianti, J.P., McFedries, A., Foda, Z.H., *et al.* Anti-diabetic activity of insulin-degrading enzyme inhibitors mediated by multiple hormones. *Nature* **511(7507)**, 94-98 (2014).
2. Bannister, T.D., Wang, H., Abdul-Hay, S.O., *et al.* ML345, a small-molecule inhibitor of the insulin-degrading enzyme (IDE). *Probe Reports from the NIH Molecular Libraries Program* (2014).

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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