

PRODUCT INFORMATION



MKT-077

Item No. 14395

CAS Registry No.: 147366-41-4
Formal Name: 1-ethyl-2-[[3-ethyl-5-(3-methyl-2(3H)-benzothiazolylidene)-4-oxo-2-thiazolidinylidene]methyl]-pyridinium, monochloride

Synonym: FJ-776

MF: C₂₁H₂₂N₃OS₂ • Cl

FW: 432.0

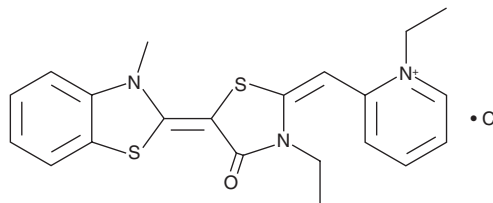
Purity: ≥95%

UV/Vis.: λ_{max}: 328, 385, 497 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

MKT-077 is supplied as a crystalline solid. A stock solution may be made by dissolving the MKT-077 in the solvent of choice, which should be purged with an inert gas. MKT-077 is soluble in organic solvents such as ethanol and DMSO. The solubility of MKT-077 in these solvents is approximately 2 mg/ml.

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 MKT-077 can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of MKT-077 in PBS (pH 7.2) is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

MKT-077 is a cationic rhodacyanine dye that demonstrates antiproliferative activity against cancer cell lines (EC₅₀s = 1.4-2.2 μM *in vitro*) through its ability to inhibit members of the heat shock protein 70 (Hsp70) family of molecular chaperones.¹ It has been shown to bind to an allosteric site conserved in Hsp70 family members, interfering with ATP hydrolysis and abrogating the interaction of the chaperone with the tumor suppressor p53.^{2,3}

References

1. Li, X., Srinivasan, S.R., Connarn, J., *et al.* Analogs of the allosteric heat shock protein 70 (Hsp70) inhibitor, MKT-077, as anti-cancer agents. *ACS Med. Chem. Lett.* **4**(11), (2013).
2. Rousaki, A., Miyata, Y., Jinwal, U.K., *et al.* Allosteric drugs: the interaction of antitumor compound MKT-077 with human Hsp70 chaperones. *J. Mol. Biol.* **411**(3), 614-632 (2011).
3. Wadhwa, R., Sugihara, T., Yoshida, A., *et al.* Selective toxicity of MKT-077 to cancer cells is mediated by its binding to the hsp70 family protein mot-2 and reactivation of p53 function. *Cancer Res.* **60**(24), 6818-6821 (2000).

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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