PRODUCT INFORMATION



Heat Shock Protein Inhibitor II

Item No. 22358

CAS Registry No.:	1859-42-3	
Formal Name:	3-(1,3-benzodioxol-5-ylmethylene)-2-pyrrolidinone	
Synonyms:	Hsp Inhibitor II, KNK 423	0
MF:	C ₁₂ H ₁₁ NO ₃	
FW:	217.2	
Purity:	≥98%	H-N
UV/Vis.:	λ _{max} : 220, 235, 292, 318 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 analysi		

Laboratory Procedures

Heat shock protein (Hsp) inhibitor II is supplied as a crystalline solid. A stock solution may be made by dissolving the Hsp inhibitor II in the solvent of choice. Hsp inhibitor II is soluble in organic solvents such as DMSO and dimethyl formamide, which should be purged with an inert gas. The solubility of Hsp inhibitor II in these solvents is approximately 10 mg/ml.

Hsp inhibitor II is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, Hsp inhibitor II should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Hsp inhibitor II has a solubility of approximately 0.1 mg/ml in a 1:5 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Heat shock protein (Hsp) inhibitor II is the active form of Hsp inhibitor I (Item No. 15395) and a benzylidene lactam compound that prevents the synthesis of inducible Hsps, such as Hsp105, Hsp72, and Hsp40. Hsp inhibitor II decreases Hsp72 synthesis in vivo and reduces thermotolerance of tumors in SCC VII tumor-containing mice.¹ At 100 μ M, it inhibits the development of thermotolerance in COLO 320 DM cells.² Inhibition of Hsp70 with Hsp inhibitor II in combination with amphotericin B (AmB ; Item No. 11636) increases susceptibility of AmB-susceptible (MICs = 0.058 versus 0.27 µg/ml for combined and AmB alone, respectively) and AmB-resistant (MICs = 21.33 versus >32 µg/ml for combined and AmB alone, respectively) strains of A. fumigatus.³

References

- 1. Koishi, M., Yokota, S., Mae, T., et al. The effects of KNK437, a novel inhibitor of heat shock protein synthesis, on the acquisition of thermotolerance in a murine transplantable tumor in vivo. Clin. Cancer Res. 7(1), 215-219 (2001).
- 2. Yokota, S., Kitahara, M., and Nagata, K. Benzylidene lactam compound, KNK437, a novel inhibitor of acquisition of thermotolerance and heat shock protein induction in human colon carcinoma cells. Cancer Res. 60(11), 2942-2948 (2000).
- 3. Blatzer, M., Blum, G., Jukic, E., et al. Blocking Hsp70 enhances the efficiency of amphotericin B treatment against resistant Aspergillus terreus strains. Antimicrob. Agents and Chemother. 59(7), 3778-3788 (2015).

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

SAFFTY 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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