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ProductInformation

Tyrphostin 25

Product Number **T 7290**
Storage Temperature 2-8 °C

Product Description
Molecular Formula: $C_{10}H_6N_2O_3$
Molecular Weight: 202.2
CAS Number: 118409-58-8
Melting Point: 245 °C[1]
IC_{50}: 3 μM[1]
Synonym: (4,5-trihydroxybenzylidene)malononitrile

Tyrphostin 25 is one of a series of small molecular weight inhibitors of epidermal growth factor (EGF) receptor kinase activity which were designed to bind to the substrate subsite of the protein tyrosine kinase (PTK) domain.[1,2] The synthesis and characterization of tyrphostin 25 and the related family of compounds has been described.[1]

In a study of autophagy and asialoglycoprotein endocytosis, tyrphostin 25 (100 μM) has been shown to inhibit endocytosis of tyramine-cellobiose-asialoorosomucoid (TC-AOM) by cultured rat hepatocytes.[3] Tyrphostin 25 has been demonstrated to prevent basal and neuropeptide-stimulated growth in small cell lung cancer (SCLC) cells.[4] Tyrphostin 25 (0-50 μM) has been used to inhibit the ATP-mediated activation of an endothelia platelet activating factor (PAF):acyllyso-GPC transacetylase.[5] A study in mammary epithelial cells has indicated that tyrphostin 25 notably diminishes the cell migration response to osteopontin.[6] Endothelin-1 induced gap junction closure in human ovarian carcinoma cells has been blocked by application of tyrphostin 25 (100 μM).[7]

Precautions and Disclaimer
For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions
This product is soluble in DMSO (50 mg/ml), yielding a clear, yellow-orange solution.

Storage/Stability
Tyrphostins should be stable for months in DMSO when stored frozen. The presence of water in the solution may accelerate hydrolysis.

References
1. Gazit, A., et al., Tyrphostins I: synthesis and biological activity of protein tyrosine kinase inhibitors. J. Med. Chem., **32(10)**, 2344-2352 (1989).
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3. Holen, I., et al., Inhibition of autophagy and multiple steps in asialoglycoprotein endocytosis by inhibitors of tyrosine protein kinases (tyrphostins). J. Biol. Chem., **270(21)**, 12823-12031 (1995).
4. Tallett, A., et al., Neuropeptides stimulate tyrosine phosphorylation and tyrosine kinase activity in small cell lung cancer cell lines. Peptides, **17(4)**, 665-673 (1996).
5. Balestrieri, M. L., et al., The role of platelet-activating factor-dependent transacetylase in the biosynthesis of 1-acyl-2-acetyl-sn-glycero-3-phosphocholine by stimulated endothelial cells. J. Biol. Chem., **272(28)**, 17431-17437 (1997).
6. Tuck, A. B., et al., Osteopontin-induced migration of human mammary epithelial cells involves activation of EGF receptor and multiple signal transduction pathways. Oncogene, **22(8)**, 1198-1205 (2003).
7. Spinella, F., et al., Endothelin-1 decreases gap junctional intercellular communication by inducing phosphorylation of connexin 43 in human ovarian carcinoma cells. J. Biol. Chem., **278(42)**, 41294-41301 (2003).

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