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ProductInformation

Tyrphostin 23

Product Number **T 7165**
Storage Temperature 2-8 °C

Product Description
Molecular Formula: $C_{10}H_6N_2O_2$
Molecular Weight: 186.2
CAS Number: 118409-57-7
Melting Point: 225 °C[1]
IC_{50}: 35 μM[1]
Synonym: RG-50810; 3,4-dihydroxybenzylidene malononitrile

Tyrphostin 23 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 23 and the related family of compounds has been described.[1]

Tyrphostin 23 (50 μM) has been used to probe the role of phosphorylation in the regulation of glycoprotein IIb-IIIa activation in permeabilized human platelets.[3] Tyrphostin 23 has been shown to inhibit voltage-operated Ca^{2+}-channel currents in vascular smooth muscle cells from rabbit ear artery.[4] Basal steroid hormone secretion from human and rat adrenocortical cells has been enhanced in the presence of tyrphostin 23 (10 μM).[5] Tyrphostin 23 (100 μM) has been used to slow the time course of rapid endocytosis in cultured bovine adrenal chromaffin cells.[6]

A molecular modeling study of the interaction between tyrphostin 23 and the μ2 subunit of the AP-2 adaptor complex has investigated the mechanism of tyrphostin 23 in inhibiting internalization of the transferrin receptor in yeast.[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, dark yellow solution.

Storage/Stability
Stock solutions of this product 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).
2. Yaish, P., et al., Blocking of EGF-dependent cell proliferation by EGF receptor kinase inhibitors. Science, **242(4880)**, 933-935 (1988).
3. Shattil, S. J., et al., Regulation of glycoprotein IIb-IIIa receptor function studied with platelets permeabilized by the pore-forming complement proteins C5b-9. J. Biol. Chem., **267(26)**, 18424-18431 (1992).
4. Wijetunge, S., et al., Tyrosine kinase inhibitors block calcium channel currents in vascular smooth muscle cells. Biochem. Biophys. Res. Commun., **189(3)**, 1620-1623 (1992).
5. Andreis, P. G., et al., Tyrphostin-23 enhances steroid-hormone secretion from dispersed human and rat adrenocrotical cells. Endocr. Res., **26(3)**, 319-332 (2000).

6. Nucifora, P. G., and Fox, A. P., Tyrosine phosphorylation regulates rapid endocytosis in adrenal chromaffin cells. J. Neurosci., **19(22)**, 9739-9746 (1999).

7. Banbury, D. N., et al., Tyrphostin A23 inhibits internalization of the transferrin receptor by perturbing the interaction between tyrosine motifs and the medium chain subunit of the AP-2 adaptor complex. J. Biol. Chem., **278(14)**, 12022-12028 (2003).

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