



Product Information

Tyrphostin 47

Product Number **T 7540**

Storage Temperature 2-8 °C

Product Description

Molecular Formula: $C_{10}H_8N_2O_2S$

Molecular Weight: 220.3

CAS Number: 118409-60-2

Melting Point: 213 °C¹

IC₅₀: 2.4 μM¹

Synonym: RG 50864;

α-cyano-3,4-dihydroxythiocinnamamide;

3,4-dihydroxy-α-cyanothiocinnamamide

Tyrphostin 47 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 47 and the related family of compounds has been described.¹

Tyrphostin 47 has been used (0-0.5 mM) to probe the role of tyrosine phosphorylation in NF-κB activation in human T-cell lines.³ A study in rabbit and human smooth muscle cells has indicated that tyrphostin 47 (50 μM) blocks induction of scavenger receptor activity, as mediated by various growth factors.⁴ Tyrphostin 47 has been utilized to investigate Cl⁻ secretion in T84 human intestinal epithelial cell monolayers and the role of cystic fibrosis transmembrane conductance regulator in this process.⁵ The internalization of two insulin-like growth factor receptors in rat hippocampal neurons has been studied with tyrphostin 47.⁶ An investigation of pial arteriolar dilation in rats and the role of endothelial nitric oxide synthase in this process has used tyrphostin at 10 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, orange solution. It is also soluble in ethanol (40 mM).⁸

Storage/Stability

Tyrphostins should be stable for months in DMSO stored frozen. The presence of water in the solution may accelerate hydrolysis. Stock solutions of this product in ethanol have been stored at -70 °C in single use aliquots.⁸

References

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3. Anderson, M. T., et al., Separation of oxidant-initiated and redox-regulated steps in the NF-κB signal transduction pathway. *Proc. Natl. Acad. Sci. USA*, **91**(24), 11527-11531 (1994).
4. Gong, Q., and Pitas, R. E., Synergistic effects of growth factors on the regulation of smooth muscle cell scavenger receptor activity. *J. Biol. Chem.*, **270**(37), 21672-21678 (1995).
5. Sears, C. L., et al., Genistein and tyrphostin 47 stimulate CFTR-mediated Cl⁻ secretion in T84 cell monolayers. *Am. J. Physiol.*, **269**(6 Pt 1), G874-882 (1995).
6. Dore, S., et al., Presence and differential internalization of two distinct insulin-like growth factor receptors in rat hippocampal neurons. *Neuroscience*, **78**(2), 373-383 (1997).
7. Xu, H. L., et al., Agonist-specific differences in mechanisms mediating eNOS-dependent pial arteriolar dilation in rats. *Am. J. Physiol. Heart Circ. Physiol.*, **282**(1), H237-243 (2002).
8. Leyton, L., et al., Regulation of mouse gamete interaction by a sperm tyrosine kinase. *Proc. Natl. Acad. Sci. USA*, **89**(24), 11692-11695 (1992).

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