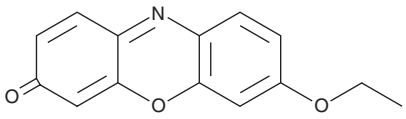
PRODUCT INFORMATION

7-Ethoxyresorufin

Item No. 16122

CAS Registry No.: 5725-91-7
Formal Name: 7-ethoxy-3H-phenoxazin-3-one
Synonyms: 7-ER, 7-Ethoxyphenoxazone, Resorufin ethyl ether
MF: $C_{14}H_{11}NO_3$
FW: 241.2
Purity: ≥95%
Ex./Em. Max: 570/580 nm
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years
Special Conditions: Protect from light and moisture.



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

7-Ethoxyresorufin (7-ER) is supplied as a solid. A stock solution may be made by dissolving the 7-ER in the solvent of choice, which should be purged with an inert gas. 7-ER is soluble in organic solvents such as chloroform, DMSO, and dimethyl formamide.

Description

7-Ethoxyresorufin (7-ER) is a fluorogenic substrate for, and competitive inhibitor of, the cytochrome P450 (CYP) isoform CYP1A1 (IC_{50} = 0.1 µM).[1-3] Upon enzymatic cleavage by CYP1A1, resorufin is released and its fluorescence can be used to quantify CYP1A1 activity. Resorufin displays excitation/emission maxima of 570/580 nm, respectively.[4] 7-ER has been used in the study of arachidonic acid (Item Nos. 90010 | 90010.1 | 10006607) metabolism and the mechanisms of vasodilation.[5,6] 7-ER is a noncompetitive inhibitor of neuronal nitric oxide synthase (nNOS; K_i = 0.76 µM).[7,8]

References

1. Dutton, D.R., Reed, G.A., and Parkinson, A. Redox cycling of resorufin catalyzed by rat liver microsomal NADPH-cytochrome P450 reductase. *Arch. Biochem. Biophys.* **268(2)**, 605-616 (1989).
2. Bourrié, M., Meunier, V., Berger, Y., *et al*. Cytochrome P450 isoform inhibitors as a tool for the investigation of metabolic reactions catalyzed by human liver microsomes. *J. Pharmacol. Exp. Ther.* **277(1)**, 321-332 (1996).
3. Tassaneeyakul, W., Birkett, D.J., Veronese, M.E., *et al*. Specificity of substrate and inhibitor probes for human cytochromes P450 1A1 and 1A2. *J. Pharmacol. Exp. Ther.* **265(1)**, 401-407 (1993).
4. Hofmann, J. and Sernetz, M. Immobilized enzyme kinetics analyzed by flow-through microfluorimetry: Resorufin-β-D-galactopyranoside as a new fluorogenic substrate for β-galactosidase. *Analytica Chimica Acta* **163**, 67-72 (1984).
5. Labitzke, E.M., Diani-Moore, S., and Rifkind, A.B. Mitochondrial P450-dependent arachidonic acid metabolism by TCDD-induced hepatic CYP1A5; conversion of EETs to DHETs by mitochondrial soluble epoxide hydrolase. *Arch. Biochem. Biophys.* **468(1)**, 70-81 (2007).
6. Imig, J.D., Zou, A.-P., de Montellano, P.R.O., *et al*. Cytochrome P-450 inhibitors alter afferent arteriolar responses to elevations in pressure. *Am. J. Physiol.* **266(5Pt 2)**, H1879-H1885 (1994).
7. Li, C.G. and Rand, M.J. Inhibition of NO-medicate responses by 7-ethoxyresorufin, a substrate and competitive inhibitor of cytochrome P450. *Br. J. Pharmacol.* **118(1)**, 57-62 (1996).
8. Jiang, H.B. and Ichikawa, Y. Neuronal nitric oxide synthase catalyzes the reduction of 7-ethoxyresorufin. *Life Sci.* **65(12)**, 1257-1264 (1999).

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