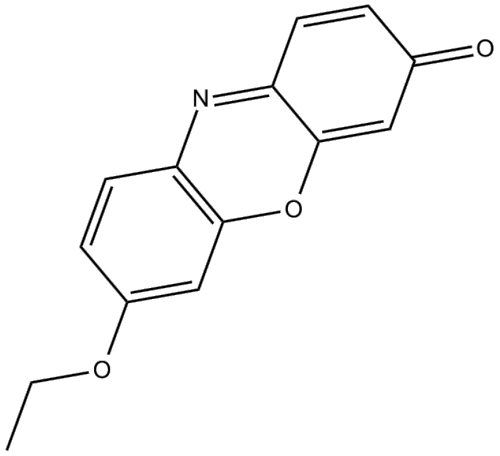
Product Data Sheet

Product Name: 7-Ethoxyresorufin
Cat. No.: GC13784

Chemical Properties

Cas. No.	5725-91-7		
Chemical Name	7-ethoxy-3H-phenoxazin-3-one		
SMILES	CCOC1=CC2=C(N=C3C=CC(C=C3O2)=O)C=C1		
Formula	$C_{14}H_{11}NO_3$	M.Wt	241.24
Solubility	DMF : 2 mg/mL (8.29 mM; ultrasonic and warming and heat to 60°C)	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°C for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		

Structure



Background

Cytochrome P450, family 1, subfamily A, polypeptide 1 is a protein that is encoded by human CYP1A1 gene. The protein is a member of the cytochrome P450 superfamily of enzymes. CYP1A1 is involved in phase I xenobiotic and drug metabolism. CYP1A1 is inhibited by fluoroquinolones and macrolides and induced by aromatic hydrocarbons. 7-Ethoxyresorufin is a specific subtrate of

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CYP1A.

In vitro: 7-Ethoxyresorufin (2-10 microM), a substrate for cytochrome P450, which binds to the heme moiety of the enzyme, reduced responses to acetylcholine concentration-dependently but not the other agonists indicating an effect on nitric oxide synthesis although neither affected the conversion of L-arginine to L-citrulline [1].

In vivo: Activities of CYP1A (7-ethoxyresorufin) in the liver was determined for comparative purposes. In mice, LPS depressed CYP2A5 at low doses but not at doses that increased pro-inflammatory cytokines and NO serum levels, and depressed CYP1A activity. Blockade of proinflammatory cytokines extended down-regulation of CYP2A5 while not affecting LPS-induced depression of CYP1A [2].

Clinical trial: Cytochrome P-450 enzyme activities of 7-ethoxyresorufin O-deethylase (ERDE) was measured in human liver needle biopsy samples from smokers and non-smokers. ERDE activity was significantly elevated in the livers of cigarette smokers. No correlation was observed between plasma cotinine concentration and ERDE activity [3].

References:
[1] Oyekan AO, McGiff JC, Rosencrantz-Weiss P, Quilley J. Relaxant responses of rabbit aorta: influence of cytochrome P450 inhibitors. J Pharmacol Exp Ther. 1994 Jan;268(1):262-9.
[2] De-Oliveira AC, Poça KS, Totino PR, Paumgartten FJ. Modulation of cytochrome P450 2A5 activity by lipopolysaccharide: low-dose effects and non-monotonic dose-response relationship. PLoS One. 2015 Jan 30;10(1):e0117842.
[3] Pelkonen O, Pasanen M, Kuha H, Gachalyi B, Kairaluoma M, Sotaniemi EA, Park SS, Friedman FK, Gelboin HV. The effect of cigarette smoking on 7-ethoxyresorufin O-deethylase and other monooxygenase activities in human liver: analyses with monoclonal antibodies. Br J Clin Pharmacol. 1986 Aug;22(2):125-34.

Caution: Product has not been fully validated for medical applications. For research use only.
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