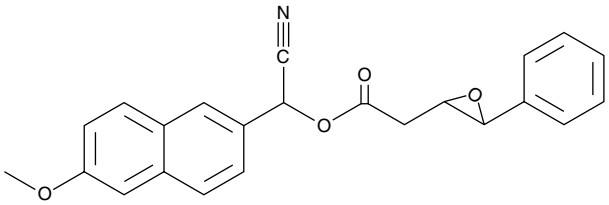
Product Information

PHOME

Item No. 10009134

CAS Registry No.: 1028430-42-3
Formal Name: 3-phenyl-cyano(6-methoxy-2-naphthalenyl)methyl ester-2-oxiraneacetic acid
MF: $C_{23}H_{19}NO_4$
FW: 373.4
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 234 nm
Note: *This substrate should only be used with the pure EH.*



Laboratory Procedures

For long term storage, we suggest that PHOME be stored as supplied at -20°C. It should be stable for at least two years.

PHOME is supplied as a crystalline solid. A stock solution may be made by dissolving the PHOME in an organic solvent purged with an inert gas. PHOME is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of PHOME in these solvents is approximately 10 mg/ml.

If aqueous stock solutions are required for biological experiments, they can best be prepared by diluting the organic solvent into aqueous buffers or isotonic saline. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

EpETrE metabolites of arachidonic acid such as 11(12)-EpETrE and 14(15)-EpETrE have been identified as endothelium derived hyperpolarizing factors with vasodilator activity.[1] Soluble epoxide hydrolase (sEH) catalyzes the conversion of EpETrEs to the corresponding DiHETrEs thereby diminishing their activity.[2] Inhibitors of sEH may therefore have clinical utility for treating hypertension and systemic inflammation.[3,4] PHOME is a fluorogenic substrate for human sEH which displays good aqueous stability and solubility making it ideal for high throughput screening (HTS) programs. Hydrolysis of the substrate yields a highly fluorescent product that can be monitored at excitation and emission wavelengths of 330 and 465 nm, respectively. This fluorescent assay has a sensitivity that is 100 times greater than previously used spectrophotometric assays.[5]

Note: If this substrate is used with crude enzyme preparations it is critical that all esterase activity is removed or inhibited, such as with organophosphate or a trifluoroketone inhibitor, and that glutathione is depleted and/or glutathione S-transferase is inhibited.

References

1. Fleming, I. Cytochrome P450 epoxygenases as EDHF synthase(s). *Pharmacol. Res.* **49**, 525-533 (2004).
2. Morisseau, C., Goodrow, M.H., Newman, J.W., *et al.* Structural refinement of inhibitors of urea-based soluble epoxide hydrolases. *Biochem. Pharmacol.* **63**, 1599-1608 (2002).
3. Imig, J.D., Zhao, X., Zaharis, C.Z., *et al.* An orally active epoxide hydrolase inhibitor lowers blood pressure and provides renal protection in salt-sensitive hypertension. *Hypertension* **46(2)**, 975-981 (2005).
4. Schmelzer, K.R., Kubala, L., Newman, J.W., *et al.* Soluble epoxide hydrolase is a therapeutic target for acute inflammation. *Proc. Natl. Acad. Sci. USA* **102(28)**, 9772-9777 (2005).
5. Wolf, N.M., Morisseau, C., Jones, P.D., *et al.* Development of a high-throughput screen for soluble epoxide hydrolase inhibition. *Anal. Biochem.* **355**, 71-80 (2006).

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Cayman Chemical

Mailing address
1180 E. Ellsworth Road
Ann Arbor, MI
48108 USA

Phone
(800) 364-9897
(734) 971-3335

Fax
(734) 971-3640

E-Mail
custserv@caymanchem.com

Web
www.caymanchem.com