

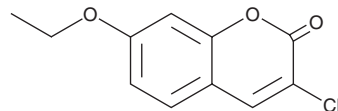
PRODUCT INFORMATION



3-Cyano-7-ethoxycoumarin

Item No. 25441

CAS Registry No.: 117620-77-6
Formal Name: 7-ethoxy-2-oxo-2H-1-benzopyran-3-carbonitrile
MF: $C_{12}H_9NO_3$
FW: 215.2
Purity: $\geq 95\%$
UV/Vis.: λ_{max} : 227, 353 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥ 2 years



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

Laboratory Procedures

3-Cyano-7-ethoxycoumarin is supplied as a crystalline solid. A stock solution may be made by dissolving the 3-cyano-7-ethoxycoumarin in the solvent of choice. 3-Cyano-7-ethoxycoumarin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of 3-cyano-7-ethoxycoumarin in these solvents is approximately 10, 25, and 30 mg/ml, respectively.

3-Cyano-7-ethoxycoumarin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 3-cyano-7-ethoxycoumarin should first be dissolved in DMF and then diluted with the aqueous buffer of choice. 3-Cyano-7-ethoxycoumarin has a solubility of approximately 0.1 mg/ml in a 1:8 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

3-Cyano-7-ethoxycoumarin is a fluorogenic probe that acts as a substrate for the cytochrome P450 (CYP) isoforms CYP1A1 and CYP1A2 and is metabolized to a lesser extent by CYP2D6 and CYP2C19.^{1,2} It is metabolized to 3-cyano-7-hydroxycoumarin, which displays excitation/emission maxima of 408/450 nm, respectively.³ 3-Cyano-7-ethoxycoumarin has also been used to quantify mixed function oxidase activity.

References

1. Donato, M.T., Jiménez, N., Castell, J.V., *et al.* Fluorescence-based assays for screening nine cytochrome P450 (P450) activities in intact cells expressing individual human P450 enzymes. *Drug Metab. Dispos.* **32**(7), 699-706 (2004).
2. Stresser, D.M., Turner, S.D., Blanchard, A.P., *et al.* Cytochrome P450 fluorometric substrates: Identification of isoform-selective probes for rat CYP2D2 and human CYP3A4. *Drug Metab. Dispos.* **30**(7), 845-852 (2002).
3. White, I.N. A continuous fluorometric assay for cytochrome P-450-dependent mixed function oxidases using 3-cyano-7-ethoxycoumarin. *Anal. Biochem.* **172**(2), 304-310 (1988).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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