
Product Data Sheet

Product Name: UK 1
Cat. No.: GC12638

Chemical Properties

Cas. No. 151271-53-3

Chemical Name 2'-(2-hydroxyphenyl)-[2,4'-bibenzoxazole]-4-carboxylic acid, methyl ester

SMILES OC(C=CC=C1)=C1C2=NC3=C(C=CC=C3C4=NC5=C(C=CC=C5C(OC)=O)O4)O2

Formula $C_{22}H_{14}N_2O_5$ M.Wt 386.4

Solubility Soluble in DMSO; Soluble in dimethyl formamide 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

UK 1, an unusual bis-benzoxazole metabolite isolated from *Streptomyces* sp. 517-02, is an inhibitor of topoisomerase II (Topo II) and hepatitis C viral replication. It is an antifungal and an antibiotic, and displays a wide spectrum of potent anticancer activities against lymphoma, leukemia, and certain solid tumor-derived cell lines with IC₅₀ values as low as 20 nM. However, UK 1 is devoid of antimicrobial activity and is inactive against *Pseudomonas aeruginosa* and *Staphylococcus aureus*, a methicillin-resistant strain of *S. aureus*. Additionally, UK-1 can bind a wide variety of di- and tri-valent metal ions, particularly Mg²⁺ ions, and form complexes with DNA in the presence of Mg²⁺ ions. Topo II are ATP-dependent enzymes, which can simultaneously cut both strands of the DNA helix to manage DNA supercoils and tangles.

In vitro: UK 1 strongly blocked the growth of human epitheloid carcinoma HeLa, mouse melanoma B16, mouse leukemia P388 cells with ED₅₀ values of 1.22 µg/ml, 1.17 µg/ml, and 0.11 µg/ml, respectively. UK 1 did not display any growth inhibitory activity against bacteria, fungi and yeasts up to 100 µg/ml [1].

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

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In vivo: Up to now, in vivo study of UK 1 is still in the development stage.

Reference:

[1]. UEKI, M., UENO, K., MIYADOH, S., ABE, K., SHIBATA, K., TANIGUCHI, M., & OI, S. UK-1, a novel cytotoxic metabolite from *Streptomyces* sp. 517-02. I. Taxonomy, fermentation, isolation, physico-chemical and biological properties. *The Journal of Antibiotics*. 1993; 46(7): 1089-1094.

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