

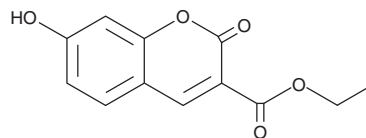
PRODUCT INFORMATION



YZ9

Item No. 15352

CAS Registry No.: 6093-71-6
Formal Name: 7-hydroxy-2-oxo-2H-1-benzopyran-3-carboxylic acid, ethyl ester
Synonym: 7-hydroxycoumarin-3-Carboxylic Acid ethyl ester
MF: C₁₂H₁₀O₅
FW: 234.2
Purity: ≥98%
UV/Vis.: λ_{max}: 348 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

YZ9 is supplied as a crystalline solid. A stock solution may be made by dissolving the YZ9 in the solvent of choice, which should be purged with an inert gas. YZ9 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of YZ9 in these solvents is approximately 1, 10, and 30 mg/ml, respectively.

YZ9 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, YZ9 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. YZ9 has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Cells that are rapidly proliferating or hypoxic emphasize glycolysis over oxidative phosphorylation to meet energy needs.^{1,2} During glycolysis, fructose 6-phosphate (F6P) is phosphorylated by 6-phosphofructo-2-kinases (PFKs) to generate fructose 2,6-bisphosphate. As PFK family members also mediate the reverse reaction as fructose 2,6-bisphosphatases, these enzymes are known as PFKFB family members. Notably, PFKFB3 is overexpressed in a wide variety of cancer cell lines.³ YZ9 is a potent inhibitor of PFKFB3, with an IC₅₀ value of 183 nM *in vitro*.³ It avidly competes with F6P at PFKFB3 (K_i = 94 nM).³ YZ9 is also cell permeable, inhibiting the growth of HeLa cells with a GI₅₀ value of 2.7 μM.³

References

1. Vander Heiden, M.G., Cantley, L.C., and Thompson, C.B. Understanding the Warburg effect: The metabolic requirements of cell proliferation. *Science* **324**, 1029-1033 (2009).
2. Palsson-McDermott, E.M. and O'Neill, L.A. The Warburg effect then and now: From cancer to inflammatory diseases. *BioEssays* **35(11)**, 965-973 (2013).
3. Seo, M., Kim, J.-D., Neau, D., *et al.* Structure-based development of small molecule PFKFB3 inhibitors: A framework for potential cancer therapeutic agents targeting the Warburg effect. *PLoS One* **6(9)**, 1-12 (2011).

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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CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM