PRODUCT INFORMATION



Y79

Item No. 15352

CAS Registry No.:	6093-71-6	
Formal Name:	7-hydroxy-2-ozo-2H-1-benzopyran-	
Synonym:	3-carboxylic acid, ethyl ester 7-hydroxycoumarin-3-Carboxylic Acid ethyl ester	HO
MF:	$C_{12}H_{10}O_5$	
FW:	234.2	
Purity:	≥98%	Ö
UV/Vis.:	λ _{may} : 348 nm	
Supplied as:	A crystalline solid	
Storage:	-20°C	
Stability:	As supplied, 2 years from the QC date provided on the Certificate of Analysis, when stored properly	

Laboratory Procedures

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

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-2kinases (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 μ M.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.

SAFFTY 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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