

PRODUCT INFORMATION



EBPC

Item No. 14183

CAS Registry No.: 4450-98-0
Formal Name: 2,5-dihydro-4-hydroxy-5-oxo-1-(phenylmethyl)-1H-pyrrole-3-carboxylic acid, ethyl ester

Synonym: NSC 229530

MF: C₁₄H₁₅NO₄

FW: 261.3

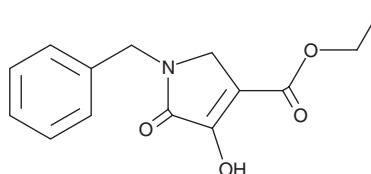
Purity: ≥98%

UV/Vis.: λ_{max}: 247 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

EBPC is supplied as a crystalline solid. A stock solution may be made by dissolving the EBPC in the solvent of choice, which should be purged with an inert gas. EBPC is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of EBPC in ethanol and DMSO is approximately 14 mg/ml and approximately 20 mg/ml in DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of EBPC can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of EBPC in PBS, pH 7.2, is approximately 0.2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

The human aldose reductase AKR1B1 is considered the rate limiting enzyme of the polyol pathway responsible for the conversion of glucose into sorbitol. It also acts as a highly efficient prostaglandin F_{2α} (PGF_{2α}) synthase in response to interleukin-1β.¹ Increased aldose reductase expression has been associated with complications of diabetes and may contribute to reduced efficacy of certain chemotherapeutic drugs.² EBPC is a potent, selective inhibitor of aldose reductase with an IC₅₀ value of 47 nM *in vitro*.³ Through its regulation of glucose metabolism, EBPC has been used to improve the cytotoxic effects of the anticancer agents doxorubicin and cisplatin in HeLa cervical carcinoma cells.² EBPC also inhibits PGF_{2α} and PGE₂ production in human endometrial cells with an EC₅₀ value of 10 μM.¹

References

1. Bresson, E., Lacroix-Pépin, N., Boucher-Kovalik, S., *et al.* *Front. Pharmacol.* **3(98)**, (2012).
2. Lee, E.K., Regenold, W.T., and Shapiro, P. *Anticancer Drugs* **13(8)**, 859-868 (2002).
3. Mylari, B.L., Beyers, T.A., and Siegel, T.W. *J. Med. Chem.* **34**, 1011-1018 (1991).

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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