

PRODUCT INFORMATION

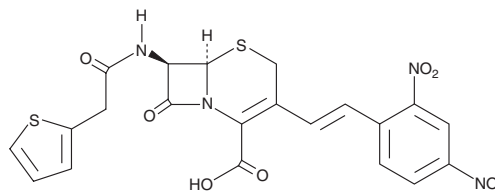


Nitrocefin

Item No. 15424

CAS Registry No.: 41906-86-9
Formal Name: (6R)-3-[(1E)-2-(2,4-dinitrophenyl)ethenyl]-8-oxo-7R-[(2-thienylacetyl)amino]-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

Synonym: Nitrocephin
MF: C₂₁H₁₆N₄O₈S₂
FW: 516.5
Purity: ≥90%
UV/Vis.: λ_{max}: 231, 286, 379 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

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

Nitrocefin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, nitrocefin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Nitrocefin has a solubility of approximately 0.04 mg/ml in a 1:20 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

The generation of β-lactamases by bacteria affords resistance to several classes of β-lactam antibiotics, including penicillins and cephalosporins.¹ Nitrocefin is a chromogenic cephalosporin substrate commonly used to detect β-lactamases in bacteria.²⁻⁴ The presence of β-lactamase activity is indicated by the appearance of a red color that is proportional in intensity to the original concentration of nitrocefin.²

References

1. Worthington, R.J. and Melander, C. Overcoming resistance to β-lactam antibiotics. *J. Org. Chem.* **78(9)**, 4207-4213 (2013).
2. O'Callaghan, C.H., Morris, A., Kirby, S.M., et al. Novel method for detection of β-lactamases by using a chromogenic cephalosporin substrate. *Antimicrob. Agents Chemother.* **1(4)**, 283-288 (1972).
3. Parr, T.R., Jr., Pai, C.H., and Bryan, L.E. Simple screening method for β-lactamase-positive and -negative ampicillin-resistant *Haemophilus influenzae* isolates. *J. Clin. Microbiol.* **20(1)**, 131-132 (1984).
4. Coudron, P.E., Moland, E.S., and Sanders, C.C. Occurrence and detection of extended-spectrum β-lactamases in members of the family *Enterobacteriaceae* at a veterans medical center: Seek and you may find. *J. Clin. Microbiol.* **35(10)**, 2593-2597 (1997).

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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