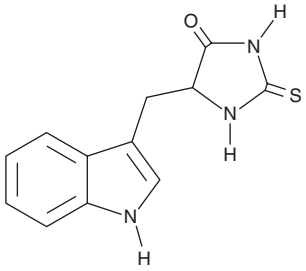
PRODUCT INFORMATION

Necrostatin-1 Inactive Control

Item No. 21192

CAS Registry No.: 64419-92-7
Formal Name: 5-(1H-indol-3-ylmethyl)-2-thioxo-4-imidazolidinone
Synonym: Nec-1i
MF: $C_{12}H_{11}N_3OS$
FW: 245.3
Purity: ≥98%
UV/Vis.: λ_{max}: 220, 267 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

Necrostatin-1 inactive control (Nec-1i) is supplied as a crystalline solid. A stock solution may be made by dissolving the Nec-1i in the solvent of choice. Nec-1i is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of Nec-1i in these solvents is approximately 3, 14, and 20 mg/ml.

Nec-1i is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, Nec-1i should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Nec-1i 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

Nec-1i is a demethylated variant of necrostatin-1 (Nec-1; Item No. 11658), a RIP1 kinase inhibitor.[1] While both Nec-1 and Nec-1i inhibit the immune regulator indoleamine 2,3-dioxygenase, Nec1i is ~ 100-fold less effective than Nec-1 in inhibiting RIP1 kinase *in vitro* and 10-fold less potent than Nec-1 in a mouse necroptosis assay.[2] However, equally high doses of Nec-1 and Nec-1i are reported to inhibit TNF-induced systemic inflammatory response syndrome *in vivo*.[2] Nec-1i is often used as an inactive control in studies using Nec-1 to exclude nonspecific off-target effects.

References

1. Degterev, A., Hitomi, J., Germscheid, M., *et al.* Identification of RIP1 kinase as a specific cellular target of necrostatins. *Nature Chemical Biology* **4(5)**, 313-321 (2008).
2. Takahashi, N., Duprez, L., Grootjans, S., *et al.* Necrostatin-1 analogues: Critical issues on the specificity, activity and *in vivo* use in experimental disease models. *Cell Death Dis.* **2012(3)**, e437 (2012).

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