# **PRODUCT** INFORMATION



JS-K

Item No. 21225

CAS Registry No.:	205432-12-8	
Formal Name:	4-[2-(2,4-dinitrophenoxy)-1-oxidodiazenyl]-1- piperazinecarboxylic acid, ethyl ester	O NO <sub>2</sub>
MF:	$C_{13}H_{16}N_{6}O_{8}$	
FW:	384.3	
Purity:	≥90%	
UV/Vis.:	λ <sub>may</sub> : 299 nm	
Supplied as:	A crystalline solid	Ô
Storage:	-20°C	
Stability:	≥4 years	
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.		

## Laboratory Procedures

JS-K is supplied as a crystalline solid. A stock solution may be made by dissolving the JS-K in the solvent of choice, which should be purged with an inert gas. JS-K is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of JS-K in these solvents is approximately 0.3 and 0.5 mg/ml, respectively. JS-K is slightly soluble in ethanol.

## Description

JS-K is a nitric oxide (NO) donor that reacts with glutathione to generate NO at physiological pH.<sup>1</sup> It inhibits proliferation of HL-60 cells (IC<sub>50</sub> = 0.5  $\mu$ M), which is prevented by the glutathione precursor N-acetyl-L-cysteine (Item No. 20261), and inhibits growth of the solid tumor cell lines PPC-1, DLD-1, and Meth A. It decreases tumor volume by over 50% in an HL-60 mouse xenograft model when used at a dose of 4 µmol/kg, i.v., three times per week. JS-K inhibits proliferation, induces apoptosis, and disrupts the cell cycle of Jurkat T acute lymphoblastic leukemia cells.<sup>2</sup> It also induces S-nitrosylation of  $\beta$ -catenin followed by dose-dependent degradation of nuclear  $\beta$ -catenin and S-nitrosylated nuclear  $\beta$ -catenin levels.

## References

- 1. Shami, P.J., Saavedra, J.E., Wang, L.Y., et al. JS-K, a glutathione/glutathione S-transferase-activated nitric oxide donor of the diazeniumdiolate class with potent antineoplastic activity. Mol. Cancer Ther. 2(4), 409-417 (2003).
- 2. Nath, N., Chattopadhyay, M., Pospishil, L., et al. JS-K, a nitric oxide-releasing prodrug, modulates β-catenin/TCF signaling in leukemic Jurkat cells: Evidence of an S-nitrosylated mechanism. Biochem. Pharmacol. 80(11), 1641-1649 (2010).

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.

## WARRANTY AND LIMITATION OF REMEDY

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