

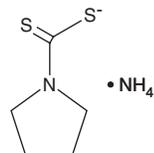
# PRODUCT INFORMATION



## Pyrrolidinedithiocarbamic Acid (ammonium salt)

Item No. 20713

**CAS Registry No.:** 5108-96-3  
**Formal Name:** 1-pyrrolidinecarbodithioic acid, monoammonium salt  
**Synonyms:** PDTC, Pyrrolidinedithiocarbamate  
**MF:** C<sub>5</sub>H<sub>8</sub>NS<sub>2</sub> • NH<sub>4</sub>  
**FW:** 164.3  
**Purity:** ≥98%  
**UV/Vis.:** λ<sub>max</sub>: 282, 284 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

Pyrrolidinedithiocarbamic acid (PDTC) (ammonium salt) is supplied as a crystalline solid. A stock solution may be made by dissolving the PDTC in the solvent of choice, which should be purged with an inert gas. PDTC is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of PDTC in these solvents is approximately 0.14, 15, and 10 mg/ml, respectively.

PDTC is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, PDTC should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. PDTC has a solubility of approximately 0.12 mg/ml in a 1:7 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

PDTC is a metal chelating compound that potently and reversibly inhibits NF-κB activation *in vitro* (100 μM).<sup>1</sup> At 300 μM, it prevents TNF-α gene expression and protein production in human monocytes after LPS application.<sup>2</sup> In vascular smooth muscle cells, PDTC (10 μM) arrests the cell cycle at the G<sub>1</sub> phase with upregulation of p21<sup>Cip1</sup> through the p38 MAPK pathway.<sup>3</sup> PDTC (100 μM) also has antioxidant properties.<sup>4</sup>

### References

- Schreck, R., Meier, B., Männel, D.N., *et al.* Dithiocarbamates as potent inhibitors of nuclear factor κB activation in intact cells. *J. Exp. Med.* **175(5)**, 1181-1194 (1992).
- Ziegler-Heitbrock, H.W.L., Sternsdorf, T., Liese, J., *et al.* Pyrrolidine dithiocarbamate inhibits NF-κB mobilization and TNF production in human monocytes. *J. Immunol.* **151(12)**, 6986-6993 (1993).
- Moon, S.-K., Jung, S.-Y., Choi, Y.-H., *et al.* PDTC, metal chelating compound, induces G<sub>1</sub> phase cell cycle arrest in vascular smooth muscle cells through inducing p21<sup>Cip1</sup> expression: Involvement of p38 mitogen activated protein kinase. *J. Cell. Physiol.* **198(2)**, 310-323 (2004).
- Xu, S., Liu, Z., Huang, Y., *et al.* Tanshinone II-A inhibits oxidized LDL-induced LOX-1 expression in macrophages by reducing intracellular superoxide radical generation and NF-κB activation. *Transl. Res.* **160(2)**, 114-124 (2012).

#### 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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