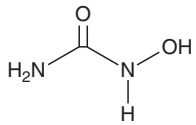
# PRODUCT INFORMATION

## Hydroxyurea

*Item No. 23725*

**CAS Registry No.:** 127-07-1
**Formal Name:** N-hydroxy-urea
**Synonyms:** NCI C04831, NSC 32065
**MF:** $CH_4N_2O_2$
**FW:** 76.1
**Purity:** ≥95%
**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

Hydroxyurea is supplied as a crystalline solid. A stock solution may be made by dissolving the hydroxyurea in the solvent of choice, which should be purged with an inert gas. Hydroxyurea is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of hydroxyurea in these solvents is approximately 1 mg/ml. Hydroxyurea is also soluble in water. The solubility of hydroxyurea in water is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Hydroxyurea is an antineoplastic agent that inhibits DNA replication and cell proliferation and induces cell cycle arrest in the $G_1$/S phase.[1] It inhibits proliferation of NCI H460 human lung cancer cells *in vitro* ($IC_{50}$ = 0.56 mM).[2] Hydroxyurea reduces ribonucleoside diphosphate reductase (RNR) activity by 75% when used at a concentration of 5 mM *via* degradation of its active site tyrosyl radical.[1,3] In a humanized mouse model of sickle cell disease (SCD), it reduces leukocyte adhesion and extravasation *via* NO production and a cGMP-dependent pathway.[4] Hydroxyurea also inhibits HIV-1 viral replication in peripheral blood mononuclear cells (PBMCs) in a dose-dependent manner with an $IC_{90}$ value of 0.4 mM.[5,6] Formulations containing hydroxyurea have been used to treat cancer, SCD, and psoriasis.[1,7,8]

### References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5. Gao, W.-Y., Johns, D.G., and Mitsuya, H. Anti-human immunodeficiency virus type 1 activity of hydroxyurea in combination with 2',3'-dideoxynucleosides. *Mol. Pharmacol.* **46(4)**, 767-772 (1994).
6. Lori, F. and Lisziewicz, J. Rationale for the use of hydroxyurea as an anti-human immunodeficiency virus drug. *Clin. Infect. Dis.* **30(Suppl 2)**, S193-S197 (2000).
7. Platt, O.S. Hydroxyurea for the treatment of sickle cell anemia. *N. Engl. J. Med.* **358(13)**, 1362-1369 (2008).





**CAYMAN CHEMICAL**
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
**PHONE:** [800] 364-9897
[734] 971-3335
**FAX:** [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM