

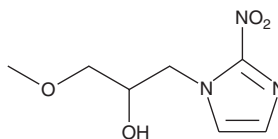
# PRODUCT INFORMATION



## Misonidazole

Item No. 15606

**CAS Registry No.:** 13551-87-6  
**Formal Name:**  $\alpha$ -(methoxymethyl)-2-nitro-1H-imidazole-1-ethanol  
**Synonyms:** NSC 261037, Ro 7-0582, SR 1354  
**MF:** C<sub>7</sub>H<sub>11</sub>N<sub>3</sub>O<sub>4</sub>  
**FW:** 201.2  
**Purity:**  $\geq$ 95%  
**UV/Vis.:**  $\lambda_{\max}$ : 222, 317 nm  
**Supplied as:** A crystalline solid  
**Storage:** -20°C  
**Stability:**  $\geq$ 4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Laboratory Procedures

Misonidazole is supplied as a crystalline solid. A stock solution may be made by dissolving the misonidazole in the solvent of choice, which should be purged with an inert gas. Misonidazole is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of misonidazole in ethanol is approximately 5 mg/ml and approximately 15 mg/ml in DMSO and DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of misonidazole can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of misonidazole in PBS (pH 7.2) is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Misonidazole is a nitroimidazole with radiosensitizing and antineoplastic properties.<sup>1</sup> Nitroimidazoles, including misonidazole, specifically accumulate as nitro anion radicals and their metabolites in hypoxic cells.<sup>1-3</sup> The metabolites of misonidazole can themselves be cytotoxic or they can increase the chemosensitivity and radiosensitivity of the target cells.<sup>1</sup> Misonidazole and derivatives, including fluoromisonidazole, are used in the imaging of hypoxic regions in tumors and in the cardiovascular system.<sup>3-5</sup>

### References

1. Brown, J.M. The mechanisms of cytotoxicity and chemosensitization by misonidazole and other nitroimidazoles. *Int. J. Radiat. Oncol. Biol. Phys.* **8(3-4)**, 675-682 (1982).
2. Josephy, P.D., Palcic, B., and Skarsgard, L.D. *In vitro* metabolism of misonidazole. *Br. J. Cancer* **43(4)**, 443-450 (1981).
3. Handley, M.G., Medina, R.A., Nagel, E., *et al.* PET imaging of cardiac hypoxia: Opportunities and challenges. *J. Mol. Cell. Cardiol.* **51(5)**, 640-650 (2011).
4. Bache, M., Kappler, M., Said, H.M., *et al.* Detection and specific targeting of hypoxic regions within solid tumors: current preclinical and clinical strategies. *Curr. Med. Chem.* **15(4)**, 322-338 (2008).
5. Mendichovszky, I. and Jackson, A. Imaging hypoxia in gliomas. *Br. J. Radiol.* **84(Spec No 2)**, S145-S158 (2011).

#### 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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