

# Product data sheet



MedKoo Cat#: 206778 Name: Nimorazole CAS: 6506-37-2 (free base) Chemical Formula: C <sub>9</sub> H <sub>14</sub> N <sub>4</sub> O <sub>3</sub> Exact Mass: 226.1066 Molecular Weight: 226.236	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years. In solvent: -80°C 3 months; -20°C 2 weeks.

## 1. Product description:

Nimorazole is a hypoxic radiosensitizer potentially useful in the treatment of patients with head and neck squamous cell carcinoma (HNSCC).

## 2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under “QC And Documents” section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

## 3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMF	10.0	44.20
DMF:PBS (pH 7.2) (1:3)	0.25	1.11
DMSO	29.44	130.14
Ethanol	2.0	8.84

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.42 mL	22.10 mL	44.20 mL
5 mM	0.88 mL	4.42 mL	8.84 mL
10 mM	0.44 mL	2.21 mL	4.42 mL
50 mM	0.09 mL	0.44 mL	0.88 mL

## 5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of “Calculator”

## 6. Recommended literature which reported protocols for in vitro and in vivo study

### In vitro study

- Meißner R, Kočíšek J, Feketeová L, Fedor J, Fárník M, Limão-Vieira P, Illenberger E, Denifl S. Low-energy electrons transform the nimorazole molecule into a radiosensitizer. *Nat Commun.* 2019 Jun 3;10(1):2388. doi: 10.1038/s41467-019-10340-8. PMID: 31160602; PMCID: PMC6546713.
- Minn H, Clavo AC, Fisher SJ, Wahl RL. Effect of nitroimidazole sensitizers on in vitro glycolytic metabolism of hypoxic squamous cell carcinoma. *Acta Oncol.* 2000;39(2):199-205. doi: 10.1080/028418600430770. PMID: 10859011.

### In vivo study

- Melsens E, De Vlieghere E, Descamps B, Vanhove C, Kersemans K, De Vos F, Goethals I, Brans B, De Wever O, Ceelen W, Pattyn P. Hypoxia imaging with 18F-FAZA PET/CT predicts radiotherapy response in esophageal adenocarcinoma xenografts. *Radiat Oncol.* 2018 Mar 7;13(1):39. doi: 10.1186/s13014-018-0984-3. PMID: 29514673; PMCID: PMC5842657.

## 7. Bioactivity

Biological target:

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Nimorazole (K-1900), a 2-nitroimidazole, is a hypoxic cell-radiation sensitizer.

## In vitro activity

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This study shows that LEEs effectively cause the reduction of the radiosensitizer nimorazole via associative electron attachment with the cross-section exceeding most of known molecules. This supports the hypothesis that nimorazole is selectively cytotoxic to tumour cells due to reduction of the molecule as prerequisite for accumulation in the cell.

Reference: Nat Commun. 2019 Jun 3;10(1):2388. <https://pubmed.ncbi.nlm.nih.gov/31160602/>

## In vivo activity

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This study investigated the radiosensitizing effect of the hypoxia modifier nimorazole in vitro and in vivo. In vitro, pre-treatment with nimorazole significantly decreased hypoxic radioresistance ( $P < 0.01$ ) while in vivo, nimorazole enhanced the efficacy of RT to suppress cancer cell proliferation in hypoxic tumor areas (Ki67,  $P = 0.064$ ), but did not affect macroscopic tumor growth.

Reference: Radiat Oncol. 2018 Mar 7;13(1):39. <https://pubmed.ncbi.nlm.nih.gov/29514673/>

*Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.*