

Product data sheet



MedKoo Cat#: 206031 Name: Etanidazole CAS#: 22668-01-5 Chemical Formula: C ₇ H ₁₀ N ₄ O ₄ Exact Mass: 214.0702 Molecular Weight: 214.18	
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:

Etanidazole (SR-2508) is a 2-nitroimidazole drug with radiosensitizing properties. Etanidazole depletes glutathione and inhibits glutathione transferase, thereby enhancing the cytotoxicity of ionizing radiation. This agent may also be useful as an imaging agent for identifying hypoxic, drug-resistant regions of primary tumors or metastases.

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

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.67 mL	23.34 mL	46.69 mL
5 mM	0.93 mL	4.67 mL	9.34 mL
10 mM	0.47 mL	2.33 mL	4.67 mL
50 mM	0.09 mL	0.47 mL	0.93 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

1. Petray PB, Morilla MJ, Corral RS, Romero EL. In vitro activity of Etanidazole against the protozoan parasite *Trypanosoma cruzi*. Mem Inst Oswaldo Cruz. 2004 Mar;99(2):233-5. doi: 10.1590/s0074-02762004000200021. Epub 2004 Jun 24. PMID: 15250482.

In vivo study

1. Abe C, Uto Y, Nakae T, Shinmoto Y, Sano K, Nakata H, Teraoka M, Endo Y, Maezawa H, Masunaga S, Nakata E, Hori H. Evaluation of the in vivo radiosensitizing activity of etanidazole using tumor-bearing chick embryo. J Radiat Res. 2011;52(2):208-14. doi: 10.1269/jrr.10122. PMID: 21436611.

7. Bioactivity

Biological target: Etanidazole is a hypoxic cell radiosensitizer.

In vitro activity

The in vitro action of an hydrosoluble 2-nitroimidazole, Etanidazole (EZL), against *Trypanosoma cruzi*, the etiologic agent of Chagas disease, was evaluated. As shown in Fig. 2a, EZL treatment provoked a dose-dependent reduction in the number of RA trypomastigotes of *T. cruzi*, with the most remarkable effect achieved at 48 h. EZL was again notably active against the clinically relevant intracellular amastigote forms of *T. cruzi*. Indeed, amastigotes infecting Vero cells or J774 macrophages were more

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susceptible to the new compound than trypan-mastigotes (Fig. 2b). At the observation timepoint after infection (72 h), only intracellular forms of the parasite could be seen in drug-treated cell cultures. No change in the viability of Vero cells or J774 macrophages could be observed even at the highest concentration of the drugs tested, indicating that *T. cruzi* and not host cells is the target for EZL (Fig. 2b, d).

Reference: Mem Inst Oswaldo Cruz. 2004 Mar;99(2):233-5.
<https://www.scielo.br/j/mioc/a/CBMVB8MyBvDmLYVJ7pXgYCy/?lang=en>

In vivo activity

The in vivo radiosensitizing activity of etanidazole, a well-known hypoxic cell radiosensitizer, was evaluated using tumor-bearing chick embryo. On the basis of tumor growth, drug administration and X-ray irradiation were performed on day 15 chick embryo, with the endpoint being day 18 chick embryo. In day 15 chick embryo, an X-ray irradiation dose of equal or less than 10 Gy did not cause significant tumor growth suppression. Intravenous administration of equal or less than 1.0 mg of etanidazole did not cause tumor growth suppression. Neither doses of equal or less than 8 Gy of irradiation nor 1.0 mg of etanidazole caused fatality of the chick embryo. On the basis of these results, the radiosensitizing effect of a combination treatment with 8 Gy of irradiation and 1.0 mg of etanidazole was evaluated. As noted above, 1.0 mg of etanidazole alone and 8 Gy of irradiation alone did not show tumor growth suppression. In contrast, a combination treatment with 8 Gy of irradiation and 1.0 mg of etanidazole showed 35% of significant tumor growth suppression.

Reference: J Radiat Res. 2011;52(2):208-14. <https://academic.oup.com/jrr/article/52/2/208/991880>

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.