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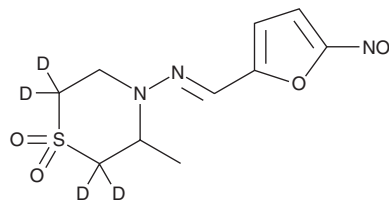
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PRODUCT INFORMATION



Nifurtimox-d₄ Item No. 28889

Formal Name: (E)-3-methyl-4-(((5-nitrofuran-2-yl)methylene)amino)thiomorpholine 1,1-dioxide-2,2,6,6-d₄
MF: C₁₀H₉D₄N₃O₅S
FW: 291.3
Chemical Purity: ≥98% (Nifurtimox)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₄); ≤1% d₀
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

Nifurtimox-d₄ is intended for use as an internal standard for the quantification of nifurtimox (Item No. 21784) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Nifurtimox-d₄ is supplied as a solid. A stock solution may be made by dissolving the nifurtimox-d₄ in the solvent of choice, which should be purged with an inert gas. Nifurtimox-d₄ is soluble in DMSO and in a 1:1 solution of acetonitrile:methanol.

Description

Nifurtimox-d₄ is intended for use as an internal standard for the quantification of nifurtimox (Item No. 21784) by GC- or LC-MS. Nifurtimox is an antiprotozoal agent.¹ It is active against *Taluuahuén*, LQ, and Brenner strains of *T. cruzi* epimastigotes with IC₅₀ values of 9.91, 12.28, and 10.44 μM, respectively. Nifurtimox inhibits clonogenic growth of HCT116, H838, C33A, LN18, KNS42, MDA-MB-231, and FaDu tumor cells under hypoxic conditions.² It reduces parasitemia and increases survival in a mouse model of *T. cruzi* infection when administered at doses of 10 and 40 mg/kg per day.³ Dietary administration of nifurtimox (150 mg/kg per day for 28 days) increases tumor cell apoptosis and reduces tumor growth in an SMS-KCNR mouse xenograft model.⁴

References

1. Maya, J.D., Bollo, S., Nuñez-Vergara, L.J., et al. Trypanosoma cruzi: Effect and mode of action of nitroimidazole and nitrofuran derivatives. *Biochem. Pharmacol.* **65**(6), 999-1006 (2003).
2. Li, Q., Lin, Q., Kim, H., et al. The anti-protozoan drug nifurtimox preferentially inhibits clonogenic tumor cells under hypoxic conditions. *Am. J. Cancer Res.* **7**(5), 1084-1095 (2017).
3. Santeliz, S., Caicedo, P., Giraldo, E., et al. Dipyridamole potentiated the trypanocidal effect of nifurtimox and improved the cardiac function in NMRI mice with acute chagasic myocarditis. *Mem. Inst. Oswaldo Cruz* **112**(9), 596-608 (2017).
4. Saulnier Sholler, G.L., Brard, L., Straub, J.A., et al. Nifurtimox induces apoptosis of neuroblastoma cells in vitro and in vivo. *J. Pediatr. Hematol. Oncol.* **31**(3), 187-193 (2009).

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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