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Diagnostik & molekulare Diagnostik



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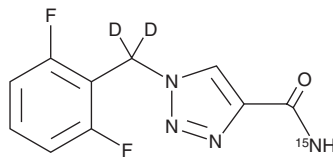
PRODUCT INFORMATION



Rufinamide-¹⁵N-d₂

Item No. 33539

CAS Registry No.: 1795037-48-7
Formal Name: 1-[(2,6-difluorophenyl)methyl-d₂]-1H-1,2,3-triazole-4-carboxamide-¹⁵N
MF: C₁₀H₆D₂F₂N₃[¹⁵N]O
FW: 241.2
Chemical Purity: ≥95% (Rufinamide)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₂); ≤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

Rufinamide-¹⁵N-d₂ is intended for use as an internal standard for the quantification of rufinamide (Item No. 18870) 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).

Rufinamide-¹⁵N-d₂ is supplied as a solid. A stock solution may be made by dissolving the rufinamide-¹⁵N-d₂ in the solvent of choice, which should be purged with an inert gas. Rufinamide-¹⁵N-d₂ is slightly soluble in acetonitrile and DMSO.

Description

Rufinamide is an anticonvulsant.¹ It inhibits the activation of voltage-gated sodium channel 1.1 (Na_v1.1) when used at a concentration of 100 μM.² Rufinamide inhibits Na_v1.1, but not Na_v1.2, Na_v1.3, and Na_v1.6, opening and increases the action potential threshold in primary rat hippocampal neurons. It is an inhibitor of carbonic anhydrase VA (CAVA; K_i = 343.8 nM) that is selective for CAVA over CAI and CAII (K_is = >10,000 nM for both).³ Rufinamide (100 μM) prolongs the preictal phase and reduces seizure-like event frequency in an *in vitro* model of epileptiform activity in rat hippocampal slices.⁴ It inhibits seizures induced by pentylenetetrazole (Item No. 18682) in a mouse model of epilepsy (ED₅₀ = 54 mg/kg, i.p.) and reduces kainic acid-induced neuronal cell death in the mouse hippocampal CA3 region when used at doses of 25, 50, and 100 mg/kg.^{5,6} Formulations containing rufinamide have been used in the treatment of seizures associated with Lennox-Gastaut Syndrome (LGS).

References

1. Wheless, J.W., and Vazquez, B. *Epilepsy Curr.* **10(1)**, 1-6 (2010).
2. Gilchrist, J.J., Dutton, S., Diaz-Bustamante, M., et al. *ACS Chem. Biol.* **9(5)**, 1204-1212 (2014).
3. Costa, G., Carta, F., Ambrosio, F.A., et al. *Eur. J. Med. Chem.* **181**, 111565 (2019).
4. Gáll, Z., Orbán-Kis, K., and Szilágyi, T. *Arch. Pharm. Res.* **40(1)**, 112-121 (2017).
5. White, H.S., Franklin, M.R., Kupferberg, H.J., et al. *Epilepsia* **49(7)**, 1213-1220 (2008).
6. Park, J.-A. and Lee, C.-H. *Arch. Pharm. Res.* **41(7)**, 776-783 (2018).

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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