

Product Data Sheet

Product Name: ICA604025

Cat. No.: GC81838

Chemical Properties

Cas. No.

Formula $C_{16}H_{15}F_5N_2O_3$

M.Wt 378.29

Solubility

Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Background

ICA604025 is a state-dependent inhibitor of human Nav1.9 voltage-gated sodium channel. ICA604025 exerts stronger inhibitory effects on activated/inactivated Nav1.9 than on resting closed Nav1.9, and serves as a tool for investigating the physiological functions of Nav1.9. ICA604025 is applicable to pain-related research [1] [2].

In Vitro, ICA604025 (0.001-100 μ M; 4 minutes) potently and state-dependently inhibits human Nav1.9-5C channels in HEK-293 cells, with an EC50 of 9 nM for activated/inactivated states and 1.1

Caution: Product has not been fully validated for medical applications. For research use only.

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μM for resting closed states^[1]. ICA604025 (0.001-100 μM ; 4 minutes) potently and state-dependently inhibits wild-type human Nav1.9 channels in HEK-293 cells, with an EC₅₀ of 10 nM for activated/inactivated states and 0.76 μM for resting closed states^[1]. ICA604025 (0.001-100 μM ; 4 minutes) potently and state-dependently inhibits cynomolgus monkey Nav1.9 channels in HEK-293 cells, with an EC₅₀ of 10 nM for activated/inactivated states and 0.45 μM for resting closed states^[1]. ICA604025 (0.001-100 μM ; 4 minutes) inhibits mouse Nav1.9 channels in HEK-293 cells with an EC₅₀ of 0.48 μM for activated/inactivated states, showing ~48-fold lower potency than for human Nav1.9^[1]. ICA604025 (0.001-100 μM ; 4 minutes) inhibits rat Nav1.9 channels in HEK-293 cells with an EC₅₀ of 0.53 μM for activated/inactivated states, showing ~53-fold lower potency than for human Nav1.9^[1]. ICA604025 (0.001-100 μM ; 4 minutes) inhibits human Nav1.9-5CF1592A/Y1599A mutant channels in HEK-293 cells with an EC₅₀ of 0.017 μM for activated/inactivated states, showing only a minor reduction in potency compared to wild-type Nav1.9-5C^[1]. ICA604025 (0-10 μM) potently inhibits native Nav1.9 channels in human DRG neurons with an IC₅₀ of 0.56 μM ^[2].

References:

- [1]. Potet F, et al. Identification and characterization of selective inhibitors of Nav1.9 voltage dependent sodium channels. *Molecular pharmacology*. 2026;108(5-6):100125.
- [2]. Shi YP, et al. Biophysical Characterization of the human Nav1.9 sodium channel in trigeminal ganglia and dorsal root ganglia neurons. *bioRxiv*. 2026 Aug 25.

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