

Product Data Sheet

Product Name: RhoNox-4

Cat. No.: GC79872

Chemical Properties

Cas. No. 2711762-70-6

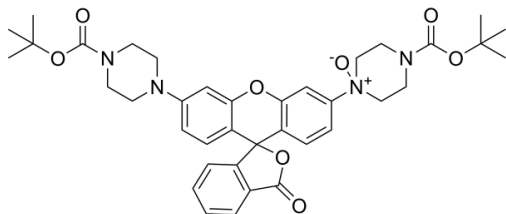
Formula $C_{38}H_{44}N_4O_8$ M.Wt 684.78

Solubility DMSO: 50 mg/mL (73.02 mM; Need ultrasonic) Storage Store at -20°C, protect from light

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

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

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RhoNox-4 is a ferroptosis inhibitor and a fluorescence activation indicator specific to Fe²⁺. RhoNox-4 selectively reacts with labile Fe²⁺ and oxidizes it to Fe³⁺, depleting labile Fe²⁺ involved in lipid peroxidation and inhibiting ferroptosis induced by ferroptosis inducers. RhoNox-4 is cell-permeable, accumulates in the endoplasmic reticulum and/or Golgi apparatus, can be used for live-cell imaging and high-throughput screening of subcellular iron status regulators, and is applicable to iron biology research [1] [2] [3] [4].

In Vitro, RhoNox-4 (0.2-12.8 μ M; 12 h) acts as a ferroptosis inhibitor in HT1080 cells treated with Erastin, maintaining approximately 80% cell viability at a concentration of 12.8 μ M, with an IC₅₀ of approximately 3.5 μ M^{[1][4]}. RhoNox-4 (0.2-12.8 μ M; 12 h) significantly inhibits RSL-3 -induced ferroptosis in HT1080 cells, and reduces the cell mortality rate by more than 50% at effective concentrations^[4]. RhoNox-4 (2 μ M; 60 minutes) enables efficient and selective detection of Fe²⁺ [2] in a cell-free HEPES buffer system. RhoNox-4 (1 μ M) can effectively penetrate the cell membrane of HepG2 cells and enable live-cell imaging of labile Fe²⁺^[1]. RhoNox-4 (1 μ M; 30 minutes) enables efficient live-cell high-throughput screening (HTS) targeting iron homeostasis regulators^[2].

References:

- [1]. Hirayama T, et al. -oxide-based and trioxolane-based fluorescent probes for monitoring labile iron and labile heme: an update. Journal of clinical biochemistry and nutrition. 2026 Jan;78(1):6-13.
- [2]. Hirayama T, et al. High-Throughput Screening for the Discovery of Iron Homeostasis Modulators Using an Extremely Sensitive Fluorescent Probe. ACS sensors. 2020 Sep 25;5(9):2950-2958.
- [3]. Tabata R, et al. Systemic Regulation of Iron Acquisition by Arabidopsis in Environments with Heterogeneous Iron Distributions. Plant & cell physiology. 2022 Jun 15;63(6):842-854.
- [4]. Kawai K, et al. Inhibition of ferroptosis by -oxide-based fluorescent probes selective oxidation of ferrous ions. Chemical science. 2025 Jun 25;16(25):11240-11245.

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