

Product Data Sheet

Product Name: Biotin-4-aminophenol

Cat. No.: GC66466

Chemical Properties

Cas. No. 901770-40-9

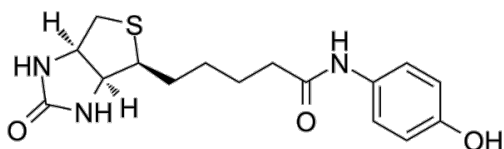
Formula $C_{16}H_{21}N_3O_3S$ M.Wt 335.42

Solubility DMSO : 100 mg/mL (298.13 mM; ultrasonic and warming and heat to 60°C) 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



Protocol

Labeling Steps

1. Reagent Preparation

Biotin-4-aminophenol: Dissolve in DMSO or DMF (final concentration 10-50mM).

Quenching Buffer: 10mM sodium azide, 10mM ascorbic acid, 5mM Trolox, dissolved in DPBS.

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

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Lysis Buffer: RIPA lysis buffer.

2. Cell Lysis

Lyse cells with RIPA lysis buffer, sonicate, and centrifuge to collect the supernatant.

3. Coupling with Protein

Incubate the cell lysate with Biotin-4-aminophenol (500 μ M) for 30 minutes, add the quenching buffer to terminate the reaction.

4. Capture of Labeled Proteins

Enrich biotinylated proteins using streptavidin agarose beads.

5. Labeling Efficiency Detection

UV spectrophotometry: Measure absorbance at 280nm (protein) and 228nm (biotin), and calculate the biotin/protein molar ratio (theoretical value: 1–5 biotins per protein molecule).

ELISA method: Use streptavidin-HRP conjugates to detect labeled proteins immobilized on plates, and quantify labeling efficiency by OD values.

[1] Ke M, Yuan X, He A, et al. Spatiotemporal profiling of cytosolic signaling complexes in living cells by selective proximity proteomics. Nat Commun. 2021 Jan 4;12(1):71.

Background

Biotin-4-aminophenol is a compound that fuses biotin with 4-aminophenol. Biotin-4-aminophenol is widely used as a bioconjugate for labeling proteins and nucleic acids, and Biotin-4-aminophenol is a key player in a variety of biochemical assays and molecular biology techniques^[1]. Biotin, which is also known as vitamin H or coenzyme R, is a water-soluble B-complex vitamin that's crucial for cell growth, metabolism, and gene expression^[2]. The 4-aminophenol moiety provides a reactive group that can be easily conjugated to other molecules^[3]. This makes biotin-4-aminophenol super useful for labeling biomacromolecules (proteins, nucleic acids), allowing for detection and quantification through the powerful streptavidin-biotin interaction. biotin-4-aminophenol is used in all sorts of applications, like enzyme-linked immunosorbent assays (ELISA), fluorescence microscopy, and flow

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cytometry^[1].

References:

- [1] Ke M, Yuan X, He A, et al. Spatiotemporal profiling of cytosolic signaling complexes in living cells by selective proximity proteomics. *Nat Commun.* 2021 Jan 4;12(1):71.
- [2] Said HM. Biotin: biochemical, physiological and clinical aspects. *Subcell Biochem.* 2012;56:1-19.
- [3] Murakami K, Yoshino M. Prooxidant activity of aminophenol compounds: copper-dependent generation of reactive oxygen species. *Biometals.* 2022 Apr;35(2):329-334.

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