Product Datasheet

Cy 5

Catalog No. **BP-08727** · CAS **146368-15-2** · Form **free base** · Physical state **solid** · Color **Red to reddish brown** · Version **1.0** · Revision **2026-11-12**

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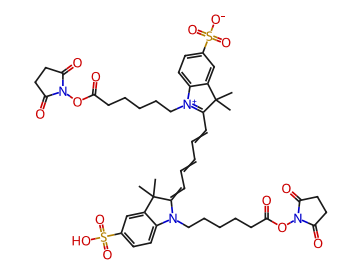
Molecular formula	—
Molecular weight	—

STRUCTURE



DESCRIPTION

Cy5-bifunctional dye is a bifunctional dye used for covalent labeling of primary amines on proteins or oligonucleotides (Ex/Em = 649 nm/670 nm). Cy5-bifunctional dye can label recombinant annexin-V to assess phosphatidylserine exposure on the cell surface via flow cytometry. Cy5-bifunctional dye can label anti-human IgG (H + L) secondary antibodies. Cy5-bifunctional dye is applicable to studies of glanders and melioidosis .

BIOLOGICAL ACTIVITY

In Vitro
Guide (The following is our recommended solution. This solution is merely a guideline and should be modified according to your specific needs.)

1.Protein Preparation: Ensure the protein is in an amine-free buffer (e.g., PBS or bicarbonate buffer) at pH 8.5-9.0, typically at a concentration of 2-10 mg/mL.

2.Dye Preparation: Dissolve the Cy5-bifunctional dye in anhydrous DMSO to a concentration of 10 mg/mL immediately before use.

3.Reaction: Add the Cy5 dye solution to the protein solution while stirring. A common molar ratio is 12:1 (Cy5:Protein), but this should be optimized based on the desired degree of labeling.

4.Incubation: Incubate the mixture at room temperature for 60 minutes in the dark.

5.Purification: Separate the labeled protein from unreacted dye using gel filtration chromatography (e.g., Sephadex G-25).

Considerations:

(1)\tOptimal pH: The reaction is pH-sensitive; primary amines must be unprotonated, making pH 8.5–9.0 necessary.

(2)\tQuenching: Cy5 can show significant quenching at high labeling ratios, which is more pronounced than with Cy3.

(3)\tStability: Store Cy5-bifunctional dye stock solutions in DMSO at -20°C, protected from light.

(4)\tPurification: Proper removal of unreacted dye is critical for accurate fluorescence measurement, often validated by calculating the absorbance ratio (A755:A565 for PE-Cy5).

SOLUBILITY

Soluble in DMSO : 4.17 mg/mL

REFERENCES

[1]. Parthasarathy N, et al. Polysaccharide microarray technology for the detection of Burkholderia pseudomallei and Burkholderia mallei antibodies. Diagn Microbiol Infect Dis. 2006;56(3):329-332. (https://pubmed.ncbi.nlm.nih.gov/16765554)

[2]. Hamon Y, et al. ABC1 promotes engulfment of apoptotic cells and transbilayer redistribution of phosphatidylserine. Nat Cell Biol. 2000;2(7):399-406. (https://pubmed.ncbi.nlm.nih.gov/10878804)