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## Product Data Sheet

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Product Name: Cy5 NHS ester (non-sulfonated)

Cat. No.: GC10047

### Chemical Properties

Cas. No.

Chemical Name (2,5-dioxopyrrolidin-1-yl) 6-[(2E)-3,3-dimethyl-2-[(2E,4E)-5-(1,3,3-trimethylindol-1-ium-2-yl)penta-2,4-dienylidene]indol-1-yl]hexanoate

SMILES CC1(C2=CC=CC=C2[N+])

SMILES (=C1C=CC=CC=C3C(C4=CC=CC=C4N3CCCCC(=O)ON5C(=O)CCC5=O)(C)C)C

Formula  $C_{36}H_{42}ClN_3O_4$ 

M.Wt 616.19

Solubility  $\geq 30.8\text{mg/mL}$  in DMSO,  $\geq 15.1\text{ mg/mL}$  in EtOH with ultrasonicStorage Store at  $-20^\circ\text{C}$ , protect from light

General tips For obtaining a higher solubility, please warm the tube at  $37^\circ\text{C}$  and shake it in the ultrasonic bath for a while. Stock solution can be stored below  $-20^\circ\text{C}$  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

Cyanine5 NHS ester is a ideal reactive dye for the labeling of peptides, proteins, and oligonucleotides which contain the amino-groups. Recently, among the life science research and diagnostics, Dye color quantity can be detected in gel electrophoresis by naked eye as the dye color is very intense and as small as 1 nanomol. For biomolecule labeling, the labeling reagent has low aqueous solubility, using of organic co-solvent to dissolve this molecular is necessary for efficient reaction. First, Cyanine dye should be dissolved in organic solvent and then added to a solution of biomolecule in appropriate aqueous buffer. For more sophisticated targets such as easily degradable proteins, when use of DMF or DMSO is undesirable, consider using water-soluble Cy5 NHS ester which does not require co-solvent, and has very similar fluorescent properties.

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

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In mice, Cy5-labeled polyplexes was intravenous injected to evaluate the targeting ability of polyplexes in tumor-bearing nude mice. Heart, liver, spleen, lung, kidney and tumor, were removed after the mice were sacrificed and the fluorescence intensities of Cy5-labeled polyplexes were immediately examined [1].

### Reference:

[1] Chen, K. ; Chen, Q.; Wang, K.; Zhu, J.; Li, W.; Li, W.; Qiu, L.; Guan, G.; Qiao, M.; Zhao, X.; Hu, H.; Chen, D. Synthesis and characterization of a PAMAM-OH derivative containing an acid-labile  $\beta$ -thiopropionate bond for gene delivery. International Journal of Pharmaceutics, 2016, 509(1-2), 314-327.

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