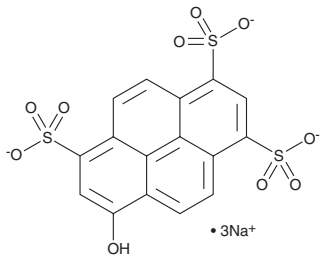
PRODUCT INFORMATION

8-Hydroxypyrene-1,3,6-trisulfonic Acid (sodium salt)

Item No. 30080

CAS Registry No.: 6358-69-6
Formal Name: 8-hydroxy-1,3,6-pyrenetrisulfonic acid, trisodium salt
Synonyms: HPTS, Pyranine
MF: $C_{16}H_7O_{10}S_3 \bullet 3Na$
FW: 524.4
Purity: ≥95%
UV/Vis.: λ_{max}: 247, 290, 370, 404 nm
Ex./Em.: 403 and 450 nm, the intensities of which decrease and increase, respectively, as pH increases from 5 to 9/510 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

8-Hydroxypyrene-1,3,6-trisulfonic acid (sodium salt) (HPTS) is supplied as a crystalline solid. A stock solution may be made by dissolving the HPTS in the solvent of choice, which should be purged with an inert gas. HPTS is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of HPTS in these solvents is approximately 15 and 1 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of HPTS can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of HPTS in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

8-Hydroxypyrene-1,3,6-trisulfonic acid is a cell-impermeable fluorescent pH probe.[1,2] It displays excitation maxima of 403 and 450 nm, the intensities of which decrease and increase, respectively, as pH increases from 5 to 9 and an emission maximum of 510 nm.[1] HPTS has been used in excitation ratio imaging to monitor changes in and measure the pH of endocytosed liposomes, acidic organelles, or the cytoplasm in live cell applications.[1,2] It is sensitive to fluorescence quenching by viologens, which can be reversed in the presence of glucose or other monosaccharides, and has been used as a glucose and carbohydrate sensor.[3]

References

1. Daleke, D.L., Hong, K., and Papahadjopoulos, D. Endocytosis of liposomes by macrophages: binding, acidification and leakage of liposomes monitored by a new fluorescence assay. *Biochim. Biophys. Acta* **1024(2)**, 352-366 (1990).
2. Han, J. and Burgess, K. Fluorescent indicators for intracellular pH. *Chem. Revs.* **110(5)**, 2709-2728 (2010).
3. Cordes, D.B. and Singaram, B. A unique, two-component sensing system for fluorescence detection of glucose and other carbohydrates. *Pure Appl. Chem.* **84(11)**, 2183-2202 (2012).

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