Product Information

Fluorescamine

≥ 98% (TLC), powder, used for detection of primary amines

F9015

Product Description

CAS Number: 38183-12-9

Synonym: 4-Phenylspiro-[furan-2(3H),1-phthalan]-3,3'-dione

Molecular Weight: 278.26

Molecular Formula: $C_{17}H_{10}O_4$

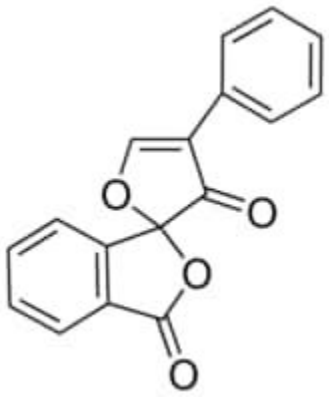
Melting Point: 154-155 °C[1]

λ_{max}: 306 nm, 284 nm, 276 nm, 235 nm

Extinction Coefficient: E^{mM} = 3.8, 4.1, 3.9, 25.9 (ether)

Excitation Wavelength: 390 nm (borate buffer, pH 8.5)[2,3]

Emission Wavelength: 465 nm;[2] 475 nm[3]



Fluorescamine, a heterocyclic dione, reacts with primary amines to form a fluorescent product. Free NH_3 yields a non-fluorescent product. The fluorescence of a solution that contains protein plus fluorescamine is proportional to the quantity of free amine groups present.[2] This is the basis of a fluorescent protein assay.[4,5] This product has been used to label casein, to give a derivatized casein substrate for measuring protease activity.[6]

Fluorescamine is used in many sensitive detection methods, such as:

- Characterization of poly-L-lysine (pLL) / DNA complexes post-modified with a multivalent hydrophilic polymer[7]
- Spectrofluorimetric analysis of procaine[8]
- Detection and quantitation of residual aminopenicillins by HPLC after fluorescamine derivatization[9]
- Determination of lisinopril in human plasma and urine by HPLC with fluorescence detection[10]
- Determination of sulfonamides in honey by HPLC with fluorescence detection[11]

Several theses[12-16] and dissertations[17,18] have cited use of product F9015 in their protocols.

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

This product may be stored at room temperature.

Solubility

This product is tested for solubility in acetone at 50 mg/mL. Fluorescamine is also soluble in DMSO[19,20] and other anhydrous, aprotic solvents.

A stock solution of 7.5 mg of fluorescamine in 25 mL of acetone is stable at room temperature, if kept free of moisture. Fluorescamine hydrolyzes quite rapidly in water to give non-fluorescent products. The half-life for the reaction with peptides is 10-100 milliseconds, with hydrolysis taking 1-10 seconds.

References

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