

Fluorescamine

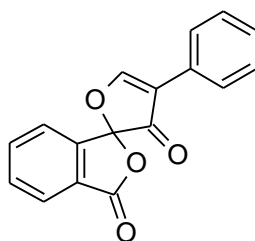
Ordering Information

Product Number: 820 (25 mg)

Storage Conditions

Store desiccated at -20 °C
Expiration date is 12 months from the date of receipt

Chemical Properties



Molecular Weight: 278.26

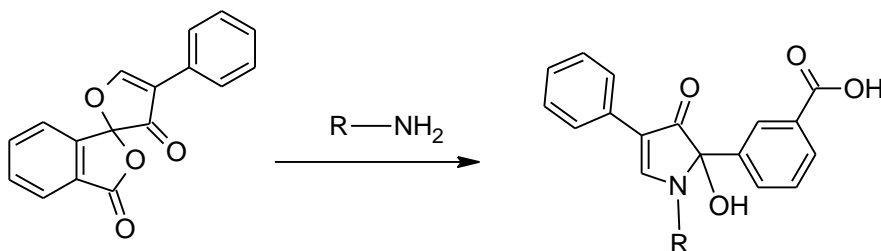
Appearance: white powder

Solvents: dimethylsulfoxide (DMSO) or dimethylformamide (DMF)

Spectral Properties: Fluorescamine has absorption maximum at 234 nm with $\epsilon = 28,000 \text{ cm}^{-1}\text{M}^{-1}$ in MeCN, and has no fluorescence. The adducts of fluorescamine with small amines (e.g., butylamine) have fluorescence quantum yield and lifetime ~ 0.23 and ~ 7.5 nanoseconds (in EtOH) respectively.

Note: Fluorescamine reacts with water and many other aqueous buffers. Please do not make buffer stock solutions. It's recommended to prepare the stock solutions in anhydrous DMF or DMSO.

Biological Applications

**Non-fluorescent****Strongly fluorescent**

Fluorescamine is intrinsically nonfluorescent but reacts rapidly with primary aliphatic amines, including those in peptides and proteins, to yield a blue-green fluorescent derivative as shown above. The above reaction allows fluorescamine to be used to sensitively detect amino acids, peptides, proteins and other amino-containing molecules. Excess reagent is rapidly converted to a nonfluorescent product by reaction with water, making fluorescamine useful for determining protein concentrations of solutions.

This amine-reactive reagent has been shown to be useful for determining protein concentrations of aqueous solutions and for measuring the number of accessible lysine residues in proteins. Protein quantitation with fluorescamine is particularly well suited to a minifluorometer or fluorescence microplate reader. Fluorescamine can also be used to detect proteins in gels and to analyze low molecular weight amines by TLC, HPLC and capillary electrophoresis.

Besides its use for solution quantitation of proteins and peptides, fluorescamine is also useful as a peptide and protein detection reagent for capillary electrophoresis. Use of fluorescamine to derivatize a standard protein of known molecular weight together with another fluorescent reagent to derivatize the sample protein allows the sample to be run simultaneously with the standard, improving the accuracy of molecular weight determination.

References

1. Eastwood D, Fernandez C, Yoon BY, Sheaff CN, Wai CM. (2006) Fluorescence of aromatic amines and their fluorescamine derivatives for detection of explosive vapors. *Appl Spectrosc*, 60, 958.
2. Adamou R, Coly A, Douabale SE, Saleck ML, Gaye-Seye MD, Tine A. (2005) Fluorimetric determination of histamine in fish using micellar media and fluorescamine as labelling reagent. *J Fluoresc*, 15, 679.
3. Eggenreich K, Zach E, Beck H, Wintersteiger R. (2004) Determination of 4-amino-m-cresol and 5-amino-o-cresol by high performance liquid chromatography and fluorescence derivatization using fluorescamine. *J Biochem Biophys Methods*, 61, 35.
4. Skelley AM, Mathies RA. (2003) Chiral separation of fluorescamine-labeled amino acids using microfabricated capillary electrophoresis devices for extraterrestrial exploration. *J Chromatogr A*, 1021, 191.
5. Cesur N, Apak TI, Aboul-Enein HY, Ozkirimli S. (2002) LC determination of aminoglutethimide enantiomers as dansyl and fluorescamine derivatives in tablet formulations. *J Pharm Biomed Anal*, 28, 487.
6. Belal F, Abdine H, Al-Majed A, Khalil NY. (2002) Spectrofluorimetric determination of vigabatrin and gabapentin in urine and dosage forms through derivatization with fluorescamine. *J Pharm Biomed Anal*, 27, 253.
7. Bantan-Polak T, Kassai M, Grant KB. (2001) A comparison of fluorescamine and naphthalene-2,3-dicarboxaldehyde fluorogenic reagents for microplate-based detection of amino acids. *Anal Biochem*, 297, 128.
8. Hong C, Kondo F. (2000) Detection, quantitation, and identification of residual aminopenicillins by high-performance liquid chromatography after fluorescamine derivation. *J Food Prot*, 63, 1421.
9. Kelly MT, Fabre H, Perrett D. (2000) Determination of taurine in plasma by capillary zone electrophoresis following derivatisation with fluorescamine. *Electrophoresis*, 21, 699.
10. Segura Carretero A, Cruces-Blanco C, Fernandez Peinado S, El Bergmi R, Fernandez Gutierrez A. (1999) Fluorimetric determination of procaine in pharmaceutical preparations based on its reaction with fluorescamine. *J Pharm Biomed Anal*, 21, 969.

Disclaimer: This product is for research use only and is not intended for therapeutic or diagnostic applications. Please contact our technical service representative for more information.