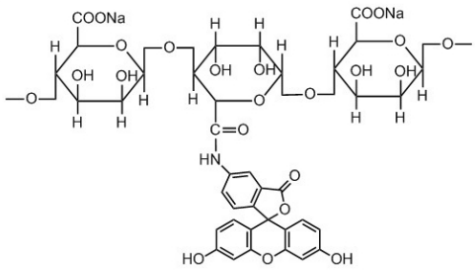
Product Data Sheet

Product Name: FITC-Alginate
Cat. No.: GC26553

Chemical Properties

Cas. No.			
Formula		M.Wt	
Solubility	Organic solvents/water	Storage	Store at -20 °C ; protect from light
General tips	For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20°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			

Protocol

Application of FITC-Alginate in the Characterization of Multilayer Microcapsule Structures [1]
This protocol is adapted from research data and provided for reference only. Adjustments may be necessary based on specific experimental requirements.
1. Synthesis of Multilayer Microcapsules: FITC-Alginate is mixed with plain sodium alginate at a ratio of 1:100 to prepare multilayer microcapsules with a liquid core. Observation under a fluorescence microscope reveals that the green fluorescence emitted by FITC-Alginate clearly differentiates and locates the spatial position of the alginate gel layer within the microcapsules.
2. Application in Degradation Studies: When the aforementioned multilayer microcapsules are placed in a chelating agent solution (e.g., EDTA or sodium citrate), the alginate shell degrades as Ca^{2+} ions are chelated. Under the fluorescence microscope, the green fluorescence (from the degraded alginate chains) can be observed transferring from the shell and dispersing into the liquid core, visually demonstrating the fate of the shell material.

Caution: Product has not been fully validated for medical applications. For research use only.
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Address: 10292 Central Ave. #205, Montclair, CA, USA

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Precautions:
(1) For your safety and health, please wear a lab coat and disposable gloves during operation.

References:
[1] Ahn SH, Rath M, Tsao CY, et al. Single-Step Synthesis of Alginate Microgels Enveloped with a Covalent Polymeric Shell: A Simple Way to Protect Encapsulated Cells. ACS Appl Mater Interfaces. 2021 Apr 28;13(16):18432-18442.

Background

FITC-Alginate is a fluorescently labeled polysaccharide material derived from sodium alginate (Ex/Em=488/525nm). The fluorescence labeling enables the visual tracking of alginate-based materials in vivo. FITC-Alginate can be used in research areas such as bioimaging, drug delivery systems, and tissue engineering[1-3].

References:
[1] Du F, Wu Y, Du F, et al. Construction of catechol-grafted chitosan alginate/barium sulfate microcapsules for computed tomography real-time imaging and gastroretentive drug delivery. Int J Nanomedicine. 2019 Jul 31;14:6001-6018.
[2] Zhu H, Srivastava R, Brown JQ, et al. Combined physical and chemical immobilization of glucose oxidase in alginate microspheres improves stability of encapsulation and activity. Bioconjug Chem. 2005 Nov-Dec;16(6):1451-8.
[3] Ahn SH, Rath M, Tsao CY, et al. Single-Step Synthesis of Alginate Microgels Enveloped with a Covalent Polymeric Shell: A Simple Way to Protect Encapsulated Cells. ACS Appl Mater Interfaces. 2021 Apr 28;13(16):18432-18442.

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