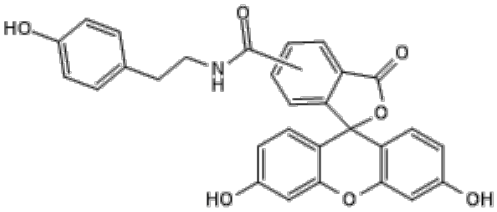
Product Data Sheet

Product Name: Fluorescein Tyramide
Cat. No.: GC50456

Chemical Properties

Cas. No.	210236-90-1		
SMILES	OC1=CC2=C(C3(C4=CC=C(C=C4O2)O)C5=CC=C(C=C5C(O3)=O)C(NCCC6=CC=C(C=C6)O)=O)C=C1		
Formula	C29H21NO7	M.Wt	495.48
Solubility	Soluble in DMSO	Storage	Store at -20°C
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

EMARS Labeling Method Using Fluorescein Tyramide[1]
This protocol is adapted from research data and provided for reference only. Adjustments may be necessary based on specific experimental requirements.
1. Cell Preparation: Use cell lines expressing HRP fusion proteins (e.g., HeLa S3-TetON/HRP-DAFGPI or HRP-Thy1GPI). Localize HRP to target regions (e.g., cell membrane, endoplasmic reticulum, or Golgi apparatus) via plasmid transfection or induced expression (e.g., by adding 1μg/mL Doxycycline).
2. EMARS Labeling Reaction: Incubate cells with Fluorescein Tyramide (0.1mM) at 37°C in the dark for 30 minutes. Add 1mM H_2O_2 to activate the reaction and incubate for 5 minutes. Terminate the reaction by washing cells twice with PBS (containing 10mM sodium azide).
3. Sample Processing and Detection: After cell lysis, isolate membrane fractions via differential

centrifugation (20,000×g, 15 minutes). Dissolve proteins using NP-40 lysis buffer and perform SDS-PAGE (10% gel). Detect Fluorescein Tyramide signals directly using a fluorescence imaging system (e.g., LAS-4000) under blue excitation light (excitation/emission wavelengths: 494nm/517nm).
Precautions:
(1) Fluorescein Tyramide demonstrates significantly higher labeling efficiency than traditional fluorescein arylazide (FA), with minimal nonspecific reactions.
(2) H_2O_2 treatment time must be strictly controlled (≤5 minutes) to avoid cytotoxicity.
(3) For your safety and health, please wear a lab coat and disposable gloves during operation.

References:
[1] Miyagawa-Yamaguchi A, Kotani N, Honke K. Each GPI-anchored protein species forms a specific lipid raft depending on its GPI attachment signal. Glycoconj J. 2015 Oct;32(7):531-40.

Background

Fluorescein Tyramide is a green fluorescent labeling reagent (λabs: 494nm; λem: 517nm). Under the catalysis of horseradish peroxidase (HRP), Fluorescein Tyramide enables in situ signal deposition via tyramide signal amplification (TSA) technology, enhancing detection sensitivity by 10–100 times, making Fluorescein Tyramide suitable for low-abundance target detection. Fluorescein Tyramide can be used in related research such as immunohistochemistry (IHC), fluorescence in situ hybridization (FISH), and flow cytometry (FCM)[1-2].

References:
[1] Hopman AH, Ramaekers FC, Speel EJ. Rapid synthesis of biotin-, digoxigenin-, trinitrophenyl-, and fluorochrome-labeled tyramides and their application for In situ hybridization using CARD amplification. J Histochem Cytochem. 1998 Jun;46(6):771-7.
[2] van Gijlswijk RP, Zijlmans HJ, Wiegant J, et al. Fluorochrome-labeled tyramides: use in immunocytochemistry and fluorescence in situ hybridization. J Histochem Cytochem. 1997 Mar;45(3):375-82.