FluoProbes®

FT-0C4701

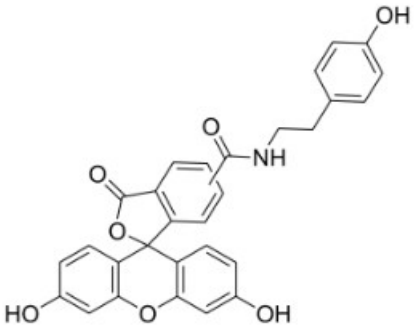
Advion Interchim scientific

Fluorescein Tyramide

For tyramide signal amplification (TSA) for increasing immunofluorescence sensitivity in multicolor immunocytochemistry (ICC), immunohistochemistry (IHC), or in situ hybridization (ISH).

Product Description

Name :	**Fluorescein Tyramide**
Catalog Number :	FP-0C4701, 1mg
Molecular Formula:	$C_{29}H_{21}NO_7$
MW :	495.49
Solubility:	DMSO
$\lambda_{exc./em.}$	498 / 517 nm
ε_{max}	75,000 M^{-1} cm^{-1}
Storage :	-20°C. Protect from light and moisture



Directions for use

Fluorescein Tyramide is a widely used green fluorescent reagent that plays a crucial role in tyramide signal amplification (TSA) in various applications such as immunohistochemistry (IHC), immunocytochemistry (ICC), fluorescence in situ hybridization (FISH), and multicolor FISH. The mechanism behind TSA involves the catalytic activity of horseradish peroxidase (HRP), which enables the localized deposition of multiple tyramide molecules, leading to the binding of fluorescein tyramide to adjacent tyrosine residues. This process enhances the fluorescent signal, allowing for highly sensitive detection of target proteins or nucleic acids.

One of the key advantages of using green fluorescent fluorescein tyramide conjugates in TSA is the ability to achieve high-density labeling of the target molecules, resulting in enhanced immunofluorescence sensitivity. This method is particularly useful for detecting low abundance targets, as it offers a detection sensitivity of over 100-fold compared to conventional procedures. Moreover, TSA enables multiplex multicolor detection, as it is not limited by antibodies from the same host species, allowing for the simultaneous detection of multiple targets.

TSA, also known as Catalyzed Reporter Deposition (CARD), is an exceptionally sensitive technique for gene or protein analysis, especially when dealing with low-abundance targets. By catalyzing the deposition of fluorescent dye/biotin tyramides onto tyrosine residues, TSA achieves high-density labeling, significantly improving detection sensitivity compared to conventional methods. This method is particularly advantageous in fluorescence detection in human tissue, where conventional ICC or FISH techniques often struggle to provide adequate signal due to autofluorescence background. Additionally, TSA allows for the use of lower antibody or probe concentrations without compromising detection sensitivity, reducing issues related to non-specific binding or cross-reactivity.

The covalent binding of the tyramide label further enables the detection of a large number of targets in the same sample using multiple rounds of sequential TSA. This feature is particularly valuable as it eliminates the limitation

of antibody availability from different host species. Furthermore, TSA can be easily integrated with conventional immunostaining techniques, making it a versatile tool in the field of molecular biology.

Protocol may be found in the litterature.

Bibliographic References

- **Hopman A H**, *et al*. Rapid synthesis of biotin-, digoxigenin-, trinitrophenyl-, and fluorochrome-labeled tyramides and their application for In situ hybridization using CARD amplification. *J Histochem Cytochem*. 46(6):771-7 (1998)
- **van Gijlswijk R P**, *et al*. Fluorochrome-labeled tyramides: use in immunocytochemistry and fluorescence in situ hybridization. *J Histochem Cytochem*. 45(3):375-82 (1997)

Related items

- DMSO, Anhydrous, FP-JW7390

Ordering information

Catalog size quantities and prices may be found at http://www.interchim.com.
Please inquire for higher quantities (availability, shipment conditions).