CF® Dye Tyramide

Fluorescent CF® Dye tyramides are used for tyramide signal amplification (TSA) for increasing immunofluorescence sensitivity in multicolor immunocytochemistry (ICC), immunohistochemistry (IHC), or in situ hybridization (ISH).



Product attributes

Chemical reactivity (reacts with)	Tyrosine residues
Functional group	Tyramide
Assay type/options	Tissue staining
Storage Conditions	Store at -10 to -35 °C, Protect from light
Detection method/readout	Fluorescence microscopy

Product Description

CF® Dye tyramide conjugates are used for tyramide signal amplification (TSA), a method for high-density labeling of a target protein or nucleic acid in situ.

- High-density labeling of a target protein or nucleic acid for enhanced immunofluorescence sensitivity
- Especially suited for the detection of low abundance targets
- Detection sensitivity of over 100-fold compared to conventional procedures
- Enables multiplex multicolor detection, not limited by antibodies from the same host species
- Wide selection of bright, photostable and water-soluble CF® Dyes, excellent options for fluorescent labeling
- CF®740 Tyramide is a unique near-IR conjugate compatible with automated staining

Also learn about TyraMax™ Amplification Dyes and Kits, Biotium's next generation tyramide dyes that offer brighter signal compared to the original CF® Dye Tyramides, and have advantages in brightness, photostability, and working solution stability compared to other TSA dyes. We also offer Ready-to-Use Tyramide Amplification Buffer, Tyramide Amplification Buffer Plus (an improved formulation for enhanced TSA sensitivity), and CF® Dye Tyramide Amplification Kits.

Superior CF® Dyes

Biotium's next-generation CF® Dyes were designed to be highly water-soluble with advantages in brightness and photostability compared to other commercially available fluorescent dyes. Our CF® Dye Tyramide conjugates are available in 22 colors. Learn more about CF® Dyes.

CF®740 Tyramide: A Stable Near-IR Tyramide for Automated Staining

For researchers considering near-infrared detection, we recommend CF®740 tyramide over CF®750 and CF®754. This is because CF®750 is unstable in oxidizing amplification buffer and should be added to the buffer immediately before performing the staining reaction. The poor stability in oxidizing amplification buffer makes the dye challenging to use for automated staining platforms (ie. BOND RX) that require longer periods with the dye in buffer. CF®754 tyramide is stable in oxidizing amplification buffer, but the dye has a broad absorption peak that can cause channel spillover. CF®740 tyramide was developed to be stable in oxidizing amplification buffer when compared to Alexa Fluor® 750 and CF®750. In addition, CF®740 tyramide has a narrower absorption peak that minimizes spillover and therefore a superior option to CF®754 tyramide. Near-IR tyramide background staining may be tissue dependent and not suitable for all targets. In general, we would recommend using near-IR staining for more abundant targets in your panel.

Tyramide Signal Amplification

TSA is a highly sensitive method for differential gene or protein analysis or detection of low-abundance targets, in fluorescent ICC, IHC, and FISH applications. An antibody- or streptavidin-HRP conjugate catalyzes the deposition of fluorescent dye/biotin tyramides on tyrosine residues on and adjacent to a target protein or nucleic acid sequence in situ. This results in high-density labeling of the target and significantly improves the detection sensitivity up to 100-fold compared to conventional methods. TSA is particularly advantageous for fluorescence detection in human tissue, where conventional ICC or FISH often fails to provide adequate signal over autofluorescence background. In applications where increased sensitivity is not required, TSA enables the use of significantly lower antibody or probe concentrations for the same level of detection sensitivity thereby reducing issues of non-specific binding or cross-reactivity. Furthermore, since binding of the tyramide label is covalent, a large number of targets can be detected in the same sample using multiple rounds of sequential TSA, in which the availability of antibodies from different host species is not a limitation. TSA also can be easily integrated with conventional immunostaining. Learn more about Tyramide Signal Amplification.

CF® Dye Tyramides

Product	Ex/Em	MW (g/mol)	Size	Catalog No.	Dye Features
CF®350 Tyramide	347/448 nm	~614	0.5 mg	92170	CF®350 Features
CF®405S Tyramide	404/431 nm	~689	0.5 mg	92197	CF®405S Features
CF®405M Tyramide	408/452 nm	~621	0.5 mg	96057	CF®405M Features
CF®405L Tyramide	395/545 nm	~1692	0.5 mg	92198	CF®405L Features
CF®430 Tyramide	426/498 nm	~707	0.5 mg	96053	CF®430 Features
CF®488A Tyramide	490/515 nm	~666	0.5 mg	92171	CF®488A Features
CF®514 Tyramide	516/548 nm	~1337	0.5 mg	92199	CF®514 Features
CF®532 Tyramide	527/558 nm	~804	0.5 mg	96066	CF®532 Features
CF®543 Tyramide	541/560 nm	~1006	0.5 mg	92172	CF®543 Features
CF®550R Tyramide	551/577 nm	~806	0.5 mg	96077	CF®550R Features
CF®555 Tyramide	555/565 nm	~1120	0.5 mg	96021	CF®555 Features
CF®568 Tyramide	562/583 nm	~833	0.5 mg	92173	CF®568 Features
CF®583R Tyramide	586/609 nm	~892	0.5 mg	96085	CF®583R Features
CF®594 Tyramide	593/614 nm	~848	0.5 mg	92174	CF®594 Features
CF®620R Tyramide	617/639 nm	~857	0.5 mg	92194	CF®620R Features
CF®640R Tyramide	642/662 nm	~951	0.5 mg	92175	CF®640R Features
CF®647 Tyramide	650/665 nm	~1104	0.5 mg	96022	CF®647 Features
CF®660R Tyramide	663/682 nm	~1007	0.5 mg	92195	CF®660R Features
CF®680R Tyramide	680/701 nm	~1031	0.5 mg	92196	CF®680R Features
CF®710 Tyramide	712/736 nm	~977	0.5 mg	96127	CF®710 Features
CF®725 Tyramide	729/750 nm	~1005	0.5 mg	96128	CF®725 Features
CF®740 Tyramide	742/767 nm	~1005	0.5 mg	96124	CF®740 Features
CF®750 Tyramide*	755/779 nm	~3040	0.5 mg	96052	CF®750 Features
CF®754 Tyramide	748/793 nm	~1000	0.5 mg	96090	

* CF®750 Tyramide is not stable in TSA buffer, and should be added to the buffer immediately before performing the staining reaction.

Alexa Fluor is a registered trademark of Thermo Fisher Scientific.

References

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