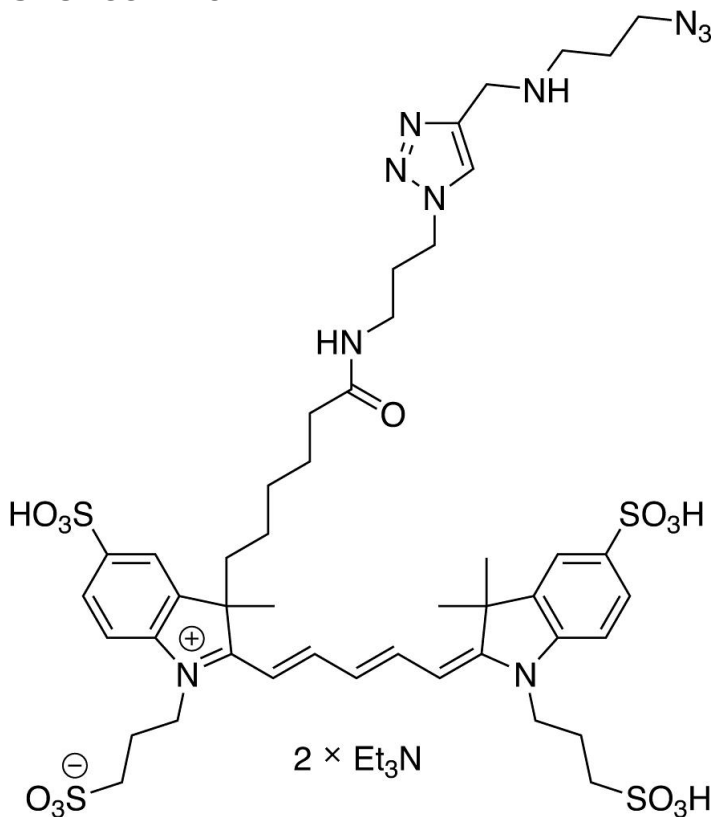




AZDYE 647 AZIDE PLUS

SKU: CCT-1482



DESCRIPTION

Azide Plus reagents is the most recent step in improving CuAAC reaction in complex media developed by scientists at Click Chemistry Tools. Azide Plus reagents contain a complete copper-chelating system in their structure, allowing for the formation of strong, active copper complexes that act simultaneously as both reactant and catalyst in the CuAAC reaction. This azide-copper complex reacts almost instantaneously with alkynes under diluted conditions. This unprecedented reactivity in the CuAAC reaction is of special value for the detection of low abundance targets, improving biocompatibility, and is also valuable for any other application where greatly improved S/N ratio is highly desired.

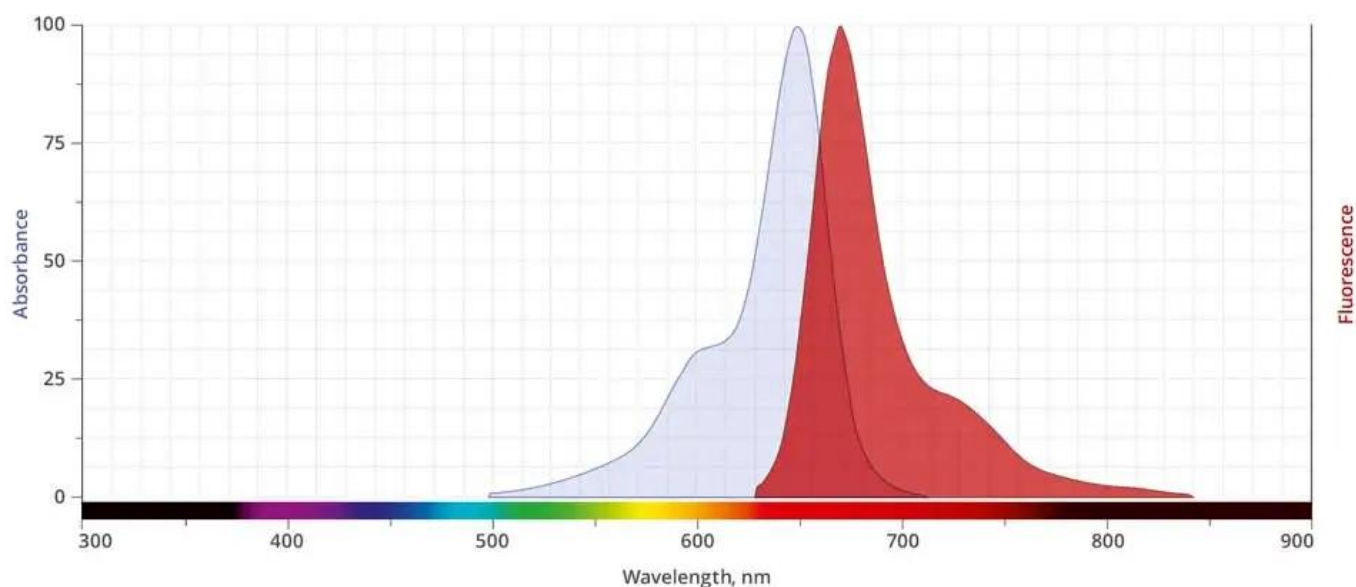
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SPECIFICATIONS

CAS Number	N/A
Molecular Weight	1281.67
Molecular Formula	C ₅₇ H ₉₂ N ₁₂ O ₁₃ S ₄
Appearance	Blue solid
Chemical Formula	C ₅₇ H ₉₂ N ₁₂ O ₁₃ S ₄
Extinction Coefficient	270,000
Purity	>95% (HPLC)
Unit Size	1 mg, 5 mg, 25 mg
Solubility	Water, DMSO, DMF
Storage Instructions	-20°C. Desiccate
Spectrally Similar Dyes	Alexa Fluor® 647, CF® 647, DyLight® 649
Laser Line	633 nm or 647 nm
Excitation/Emission Maximum	648/671 nm
Shipping Conditions	Ambient temperature
Shipping Instructions	Ambient temperature

ABS/EM SPECTRA



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CLICK REACTION PROTOCOL

Click Reaction Protocol for Staining Fixed/Permeabilized Cell

This is a general protocol for fixed/permeabilized cell imaging through a copper-catalyzed click reaction using the fluorescent Azide Plus reagent. We recommend using this protocol as a starting point for optimization of particular click chemistry procedures. We have found that a 1.5-3.0 μM concentration of Azide Plus reagent was optimal for most applications, including imaging of EdU incorporated into newly synthesized DNA and imaging of OPP labeled proteins without causing a high background signal. The optimal final concentration of the Azide Plus reagent is sample dependent and may range from 0.5 μM to 10 μM . Final concentrations below or above this range are also possible, and should be optimized per the specific application.

1. Prepare the following click solutions:
 - 50 mM copper sulfate in water
 - 300 mM sodium ascorbate in water (dissolve 60 mg of sodium ascorbate in 1 mL of water)
 - Subtext
2. 1 mM Azide Plus reagent in DMSO or water

Table 1

Reaction Component	Number of coverslips or wells of a 96-well plate			
	1 coverslip or 10 wells	5 coverslips or 50 wells	10 coverslips or 100 wells	20 coverslips or 200 wells
Reaction Buffer (Tris)	888 μL	4.4 mL	8.9 mL	17.8 mL
50 mM Copper Sulfate	10 μL	50 μL	100 μL	200 μL
AZDye Azide Plus Solution (2 μM final concentration)	2 μL	10 μL	20 μL	40 μL
Sodium ascorbate	100 μL	500 μL	1 mL	2 mL
Total Volume	1 mL	5 mL	10 mL	20 mL

3. Remove the permeabilization buffer (if used). Wash the cells in each well twice with 1 mL of PBS. Remove PBS.
4. Immediately add 1 mL of the **Reaction Cocktail** to the sample. Evenly distribute the

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reaction cocktail over the sample.

5. **Protect from light**, and incubate the plate for 30 minutes at room temperature.
6. Remove the reaction cocktail. Wash each well once with 1 ml of Wash Buffer. Remove the Wash Buffer.
7. Wash each well with 1 mL of PBS. Remove PBS.

Click Reaction Protocol for Cell Lysates Labeling

This is a general protocol for labeling proteins in cell lysate through a copper-catalyzed click reaction using the fluorescent Azide Plus reagent. We recommend using this protocol as a starting point for optimization of particular click chemistry procedures. We have found that a 20 μM concentration of Azide Plus reagent was sufficient to label all alkyne-tagged proteins in the cell lysate without causing a high background signal. The optimal final concentration of the Azide Plus reagent is sample dependent and may range from 5 μM to 50 μM . Final concentrations below or above this range are also possible, and should be optimized per the specific application.

1. Prepare the following click solutions:
 - 100 mM THPTA ligand in water (100 mg of THPTA in 2.3 mL of water)
 - 20 mM copper sulfate in water (dissolve 11.6 mg of copper II sulfate pentahydrate in 2.3 mL of water)
 - 300 mM sodium ascorbate in water (dissolve 60 mg of sodium ascorbate in 1 mL of water)
 - 1 mM Azide Plus reagent in DMSO or water
2. For each protein lysate sample, add the following to a 1.5 mL microfuge tube, then vortex briefly to mix.
 - 50 μL of protein lysate (1-5 mg/mL) in protein extraction buffer
 - 120 μL of Tris buffer
 - 4 μL of Azide Plus reagent stock solution (5 μM final concentration)
3. Add 10 μL of 100 mM THPTA solution, vortex briefly to mix.
4. Add 10 μL of 20 mM CuSO_4 solution, vortex briefly to mix.
5. Add 10 μL of 300 mM sodium ascorbate solution to initiate click reaction, vortex briefly to mix.
6. Vortex continuously or rotate end-over-end for 30 minutes at room temperature.
7. Add the labeling reaction to 3 mL of cold (-20°C) methanol, 0.75 mL of Chloroform and 2.1 mL of water. Cool it to -20°C for 1 hour.
8. Centrifuge for 10 minutes at 13,000-20,000 $\times g$, then carefully remove upper aqueous layer without disturbing the interface layer containing proteins.

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9. Add 450 μ L of methanol, vortex briefly.
10. Centrifuge for 5 minutes at 13,000-20,000 $\times$ g to pellet protein. Carefully remove and discard supernatant.
11. Open the lid to microfuge tube and allow protein pellet to air dry. Do not over dry the pellet!

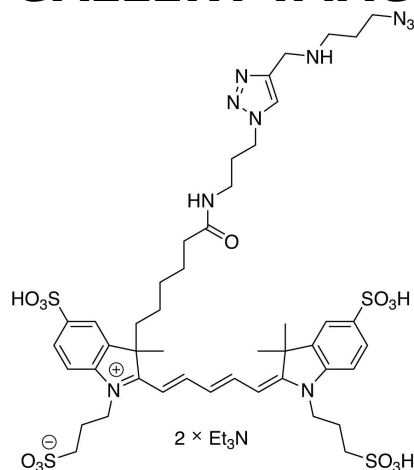
SELECTED REFERENCES

1. Gray, R. A. V., *et al.* (2021). Optimized Incorporation of Alkynyl Fatty Acid Analogs for the Detection of Fatty Acylated Proteins using Click Chemistry. *JoVE Journal*, **10 (3791)**, 62107. [[JoVE Journal](#)]

DOCUMENTS

- [Safety Data Sheet](#)
- [Datasheet](#)

GALLERY IMAGES



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