

Product Instruction Manual

Cat	Name	Size	Ex/Em
BGT-CHM-05131	AF488 azide	0.5mg	490/519 nm

Storage and Shipping Conditions

Store at -20°C protected from light. Ship with ice packs.

Product Introduction

The core of the AF Azide series consists of azide-modified AF fluorophores. They can specifically and covalently conjugate to alkyne-modified target molecules (including nucleotides, carbohydrates, proteins, etc.) via the copper(I)-catalyzed azide-alkyne cycloaddition (CuAAC) reaction, enabling precise labeling and detection of biomolecules. Designed based on bioorthogonality, the azide group exhibits exceptional inertness in biological systems and does not undergo non-specific reactions with endogenous biomolecules.

Product Features

High Stability: Strong fluorescence brightness, long luminescence duration, and resistance to quenching.

Easy to Use: Compatible with other reagents from our company, providing convenience and flexibility.

Instructions for Use

1. Reagent Preparation

- (1) Dye Dissolution: Take an appropriate amount of AF488 Azide product, add anhydrous DMF or DMSO to prepare a stock solution of suitable concentration (recommended dilution to 1~10 mM according to experimental requirements, preferably prepared immediately before use). For reactions in aqueous systems, slowly add a small amount of aqueous buffer for dilution after dissolution, and avoid adding water directly to prevent dye precipitation.
- (2) Catalyst System Preparation: A combination of copper(II) sulfate and ascorbic acid (reducing agent) is recommended to generate copper(I) catalyst in situ. Mix the copper(II) sulfate solution and ascorbic acid solution according to the reaction system ratio, and incubate at room temperature for 5 minutes before use.

2. Sample Preparation

- (1) Sample Pretreatment: Perform pretreatment according to sample type (e.g cells, DNA, proteins): Cell samples require gentle permeabilization (avoid harsh treatments that may damage sample structure); Biomolecule samples (e.g proteins, nucleotides) must be of high purity to prevent impurities from interfering with the reaction.

3. Labeling Protocol

- (1) Add the target molecule (alkyne-modified biomolecule) to the pretreated sample and mix gently.
- (2) Add the prepared AF488 Azide stock solution to achieve the desired final concentration (recommended final concentration: 0.1~1 μ M, which can be optimized based on sample type).
- (3) Add the copper(I) catalyst system, mix by gentle inversion, and avoid bubble formation.
- (4) Incubate at room temperature in the dark for 30 minutes to 1 hour (incubation time may be extended appropriately based on reaction efficiency, but should not exceed 2 hours).

After incubation, wash the sample 2–3 times with an appropriate buffer (e.g., PBS) to remove unbound free dye and reduce background signal.

Precautions

1. All fluorescent dyes are susceptible to quenching. Please protect them from light as much as possible to slow down fluorescence quenching.
2. This product is for research use only and must not be stored in residential premises.
3. For your safety and health, please follow the standard laboratory safety regulations of your institution.