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MHPH (MALEIMIDE HYNIC) LINKER

SKU: S-1009-010

DESCRIPTION

MHPH (Maleimide HyNic) converts thiol groups on proteins and surfaces to HyNic groups, which is one of the fundamental linkers to SoluLINK bioconjugation technology. HyNic reacts with 4FB groups on other biomolecules or surfaces to create stable aromatic hydrazone bonds which are chromophoric and may be easily quantified spectrophotometrically.

SPECIFICATIONS

Reactivity	4FB
Unit Size	10 mg
Storage Instructions	Desiccated: -15° to -25°C
Applications	Aptamers
Label	HyNic

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TECHNICAL INFORMATION

MHPH (catalog number: S-1009) is a maleimide that converts thiols on biomolecules and surfaces to HyNic linker molecules for conjugation to 4FB-modified biomolecules.

Introduction to SoluLINK Bioconjugation Technology

This core technology is based on the formation of a stable aromatic bond formed from an aromatic hydrazine and an aromatic aldehyde. S-HyNic 1 (succinimidyl 6-hydrazinonicotinate acetone hydrazone) is used to incorporate aromatic hydrazine linkers on biomolecules. S-HyNic is an amino-reactive reagent that directly converts amino groups on biomolecules and surfaces to HyNic groups. S-4FB 2 (succinimidyl 4-formylbenzoate, SFB) is used to convert amino groups to aromatic aldehydes (4-formylbenzamide (4FB) groups). Addition of a HyNic-modified biomolecule to a 4FB-modified biomolecule or surface directly leads to the formation of the conjugate (Figure 1). The conjugate bond is stable to 92°C and pH 2.0-10.0. The recommended pH for antibody conjugation is 6.0. Unlike thiol-based conjugation protocols where reducing reagents are required that that can compromise the activity of proteins by cleaving disulfide bonds, the HyNic-4FB conjugation couple leaves disulfide bonds intact. No oxidants, reductants or metals are required in the preparation of conjugate.

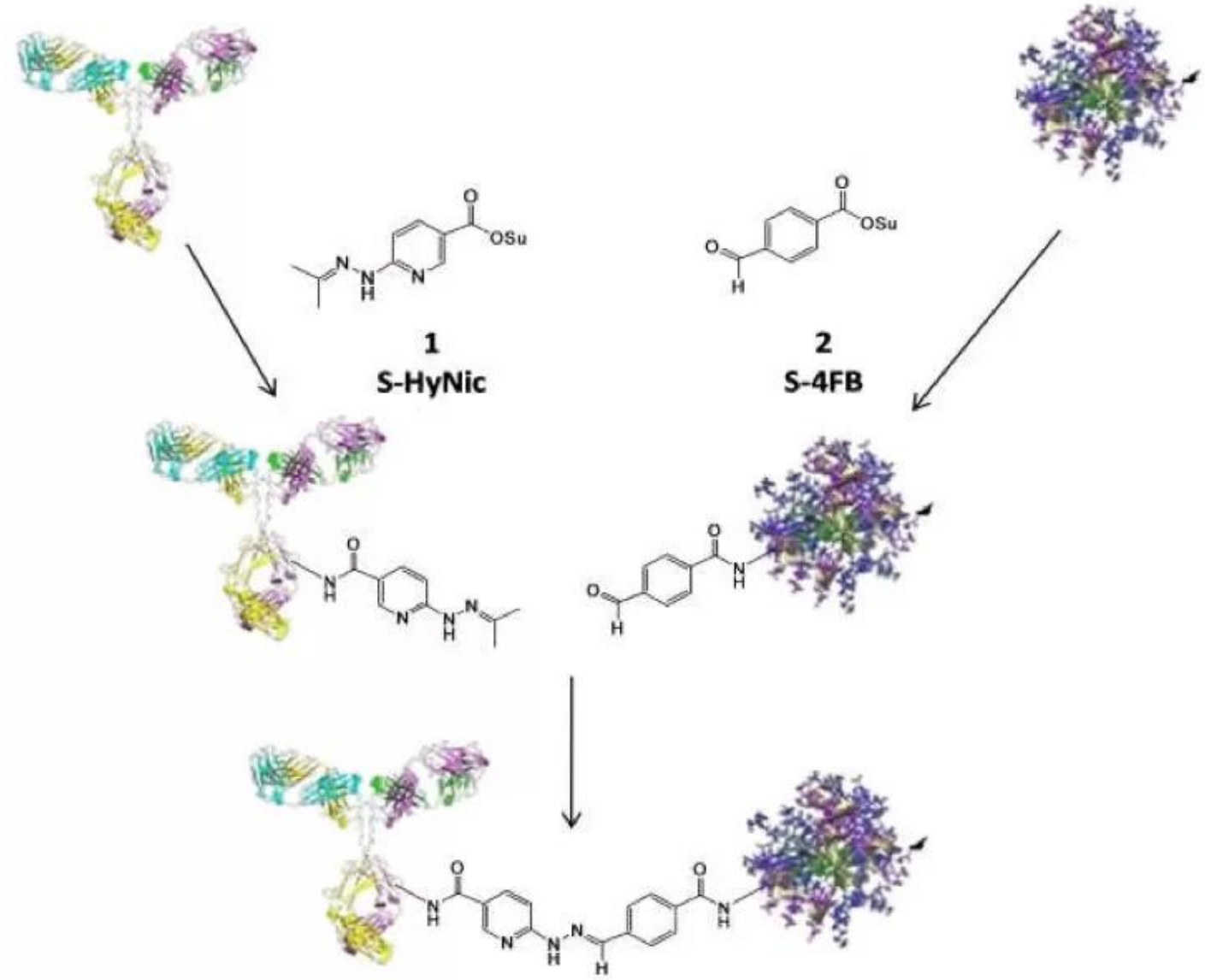

Figure 1: Schematic representation of the SoluLINK bioconjugation chemistry where an antibody is modified with S-HyNic to incorporate HyNic groups and a second protein is modified with S-4FB to incorporate 4FB groups. Conjugate is formed directly by simply mixing the HyNic-modified antibody with the 4FB-modified proteins.

Further enhancing the many advantages of the HyNic/4FB conjugation couple is the discovery by Dirksen *et al.* that showed that aniline catalyzes the formation of this Schiff's base. This is especially effective for large biomolecule conjugations. In the case of antibody-protein conjugations the addition of 10 mM TurboLink Catalyst Buffer (aniline) to the reaction mixture converts >95% of the antibody to conjugate in ~2 hours using 1-2 mole equivalents of second

protein.

The HyNic-4FB conjugation couple is chromophoric – the conjugate bond absorbs at 354 nm and has a molar extinction coefficient of 29,000 L/(mol*cm). This allows (1) real time spectrophotometric monitoring of a conjugate reaction, (2) ability to visualize the conjugate during chromatographic purification using a UV or photodiode array detector and (3) quantification of conjugation.

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DOCUMENTS

- HyNic Protein MSR Instructions
- User Guide
- HyNic-Protein MSR Calculator
- Safety Data Sheet
- Troubleshooting Guide – Bioconjugation
- Oligonucleotide Buffer Exchange and Desalting Protocol
- Protein Buffer Exchange and Desalting Protocol
- BCA Protein Assay Protocol
- Bradford Assay Protocol
- Download CoA
- Datasheet

GALLERY IMAGES

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