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S-4FB LINKER (DMF SOLUBLE)

SKU: S-1004



DESCRIPTION

The S-4FB heterobifunctional crosslinker is fundamental to the SoluLINK bioconjugation technology. S-4FB reacts with primary amines on proteins (through lysine amino acids) or amino-modified oligonucleotides or surfaces, introducing a 4FB linker that forms stable covalent conjugates with biomolecules possessing HyNic linkers.

SPECIFICATIONS

Reactivity	HyNic
Storage Instructions	Desiccated: -15° to -25°C
Label	4FB

For research use only. Not intended for therapeutic or diagnostic use in animals or humans.

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TECHNICAL INFORMATION

Introduction to SoluLINK Bioconjugation Technology

This core technology is based on the formation of a covalent bond formed from an aromatic hydrazine and an aromatic aldehyde. S- HyNic 1 (succinimidyl 6-hydrazinonicotinate acetone hydrazone, SANH) 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.

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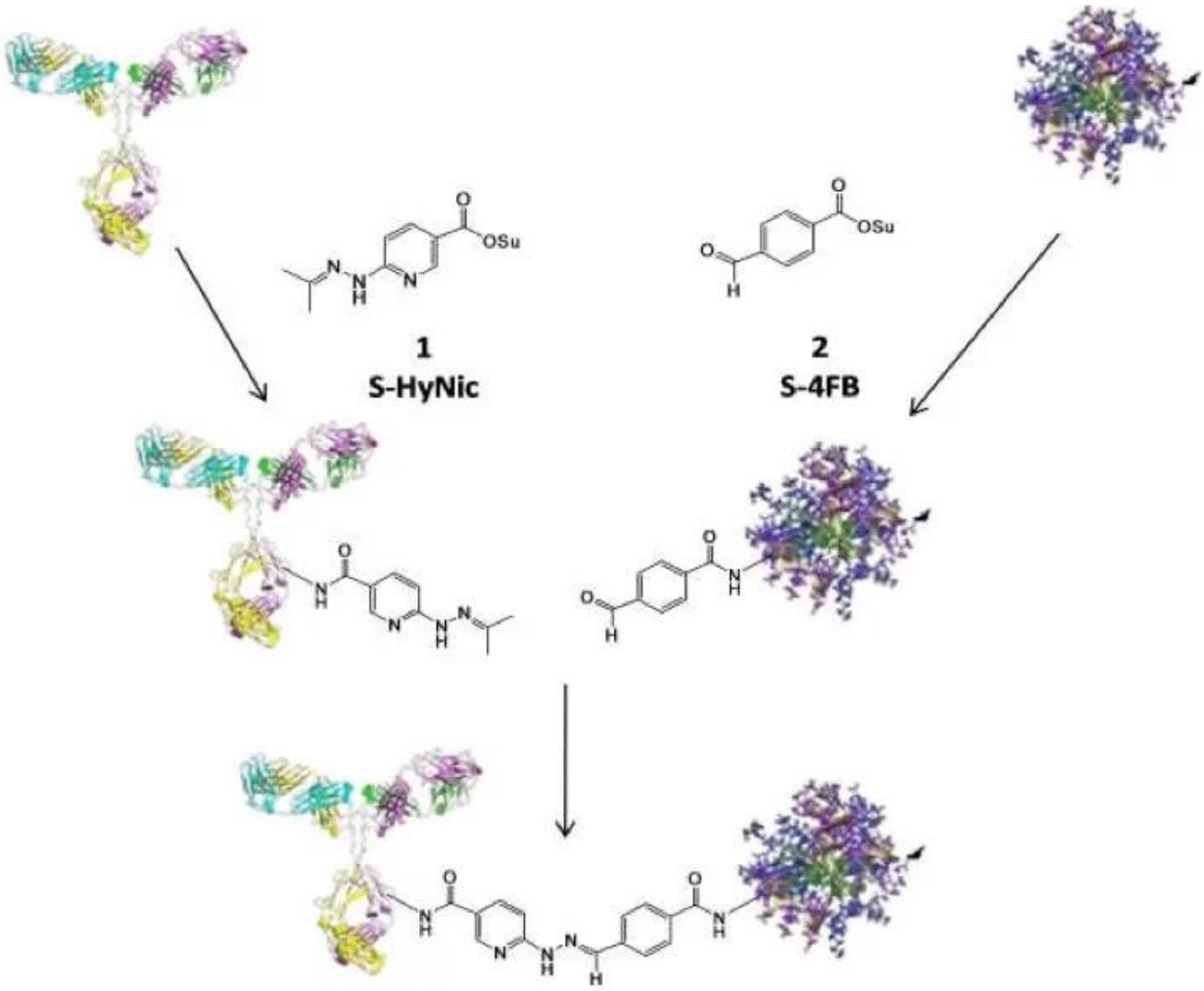


Figure 1: Schematic representation of the SoluLINK bioconjugation chemistry where an antibody is modified with S-HyNic to incorporate HyNic groups and a second protein is modified with S-4FB to incorporate 4FB groups. Conjugate is formed directly by simply mixing the HyNic-modified antibody with the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

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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

- User Guide
- Amino-Oligonucleotide Modification Calculator
- Safety Data Sheet
- Protein Modification Calculator
- Troubleshooting Guide – Bioconjugation
- 4FB-Oligonucleotide MSR Calculator
- 4FB-Protein MSR Calculator
- 4FB Oligonucleotide MSR Instructions
- 4FB Protein MSR Instructions
- Oligonucleotide Buffer Exchange and Desalting Protocol
- Protein Buffer Exchange and Desalting Protocol
- BCA Protein Assay Protocol
- Bradford Assay Protocol
- Download CoA
- Datasheet

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GALLERY IMAGES





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