



SULFO S-4FB LINKER (WATER SOLUBLE)

SKU: S-1008



DESCRIPTION

The S-4FB heterobifunctional crosslinker is fundamental to the SoluLINK bioconjugation technology. Sulfo-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. Sulfo-S-4FB contains a Sulfo-NHS ester, which makes this linker water soluble. No DMF or other organic solvents are necessary to dissolve the linker prior to use.

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.



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 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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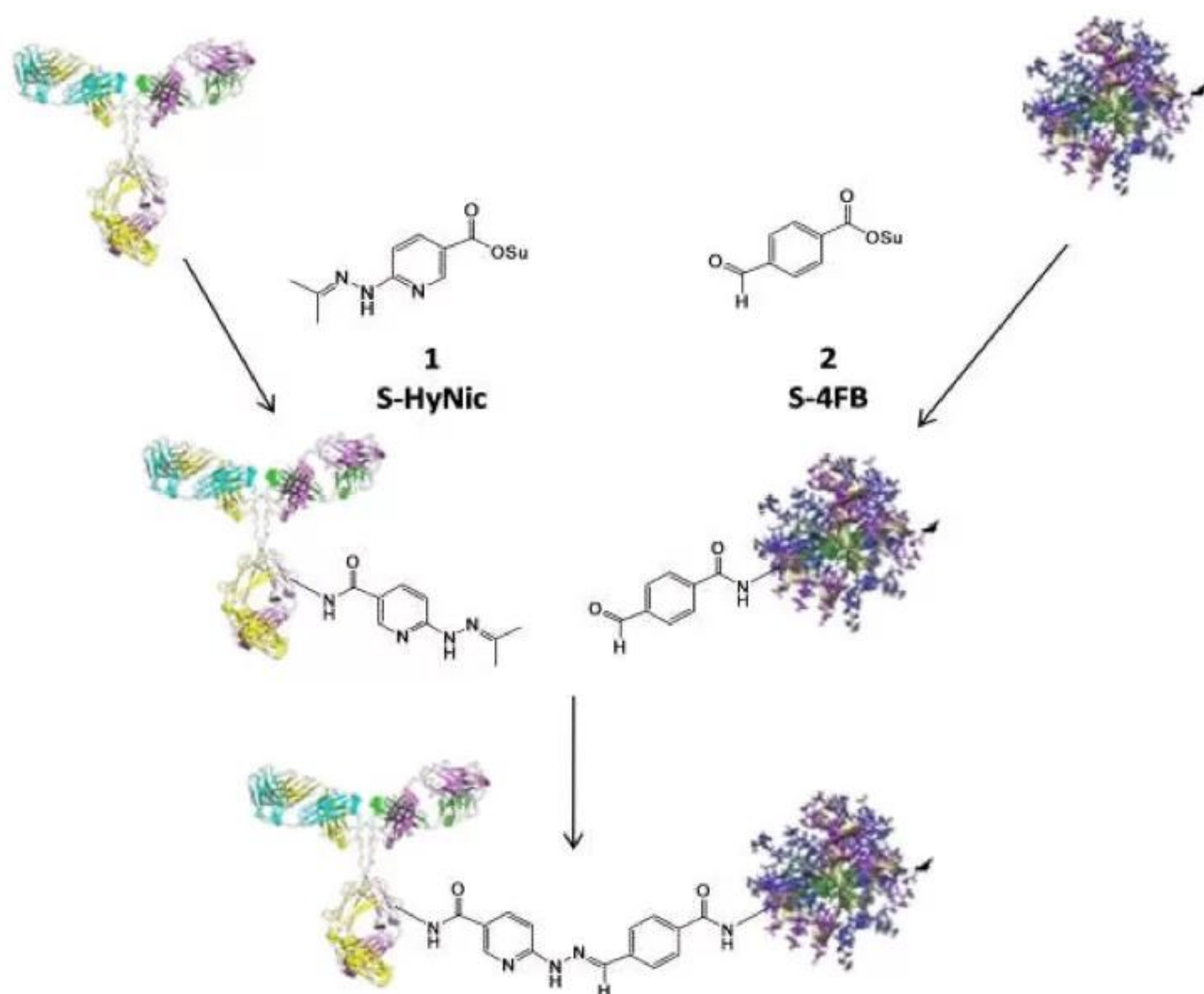


Figure 1: Schematic representation of the SoluLINK bioconjugation chemistry where an antibody is modified with S-HyNic to incorporate HyNic groups and a second protein is modified with S-4FB to incorporate 4FB groups. Conjugate is formed directly by simply mixing the HyNic-modified antibody with the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

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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

- [User Guide](#)
- [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](#)
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GALLERY IMAGES



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