interchim®

solulink™

your link to everything.

2012 - 2013 Product Guide

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solulink™

your link to everything.

Overview of Linking Technology

- Catalyzed conjugation—faster kinetics for greater efficiency and yields
- Quantifiable—uses a UV signature wavelength and simple UV scan
- Bond stability—conjugate bond is stable to 92˚C and pH 2.0 – 10.0
- Preserves activity—gentle chemistry

Solulink was founded on an easy-to-use, new linking technology that enables faster and quantitative conjugation of biomolecules with higher efficiencies and yields (Figure 1). Biomolecule conjugation is fundamental to assay development, ELISAs, affinity chromatography, flow cytometry, and bead assays.

The standard maleimido, SMCC, and other conjugation chemistries are notoriously slow, inefficient, tedious, and not easily measurable, adding unnecessary time and expense. At Solulink, we are seeking to change this paradigm with our linker technology.

> ***"I was extremely satisfied by how easily everything went together and based on these results will be hard-pressed to ever again use a maleimide. This feedback is from someone who has tried all the other commercial coupling chemistries and none work so nicely as yours."***
>
> Research Director, Ensemble Discovery

Do you have a challenging conjugation? Our experts are here to help you.

Leading pharmaceutical, diagnostic, biotechnology, life science, government and academic institutions worldwide use Solulink in their products and projects.

- Contact us at +1 888.625.0670 or solulink@solulink.com to solve your conjugation needs today.
- solulink.com
  ph. +1 858.625.0670 fax. +1 858.625.0770
  9853 Pacific Heights Boulevard, Suite H
  San Diego, CA 92121

A few of Solulink's experts on staff.

Do ulink? ilink.

Solulink's Linking Technology

Solulink's proprietary linking technology is built on a fast, catalyzed, UV-traceable, stable linker that offers greater efficiency and higher yield in a considerably simpler method. Solulink introduces two linkers:

- HyNic (6-hydrazino-nicotinic acid, an aromatic hydrazine)
- 4FB (4-formylbenzoate, an aromatic aldehyde)

In the Solulink strategy, biomolecule 1 is linked to HyNic, and biomolecule 2 is linked to 4FB, through primary amines or thiols on proteins, oligos, peptides, carbohydrates, or surfaces. Mixing of the two biomolecules, with TurboLink™ catalyst, allows the two linkers to rapidly, selectively, and efficiently react with each other. The result is two biomolecules conjugated through a UV-traceable, stable bond (bis-arylhydrazone) with measurable absorbance at 354 nm (Figure 2). Any two proteins, oligos, peptides, etc., regardless of molecular weights, can be efficiently conjugated.

Explore Solulink

Solulink's linking technology is available as linker reagents, easy-to-use kits, bead products, and in bulk quantities. These products are used by research and commercial organizations worldwide for the development of next-generation biomedical assays and detection systems. We invite you to review our linking solutions to find the product to best fit your application.

Visit solulink.com/technology for more information.

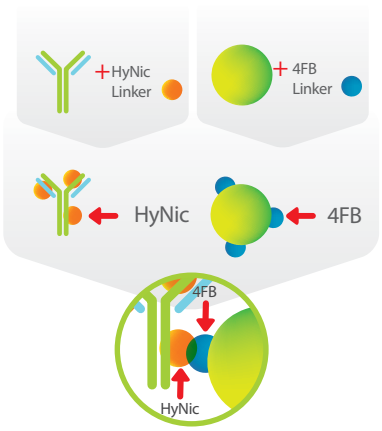

Figure 1. Solulink's easy-to-use linker-based conjugation technology.

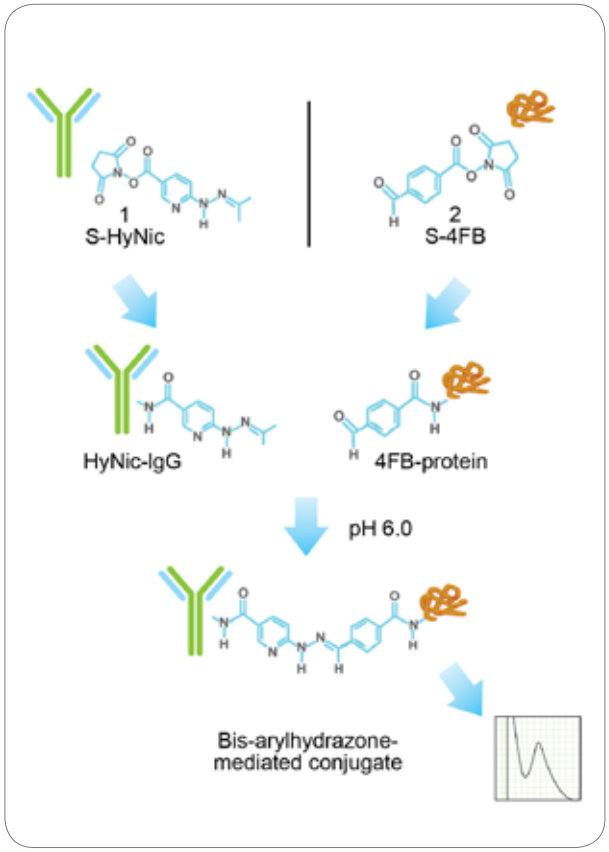

Figure 2. Solulink's conjugation workflow.

“Highest Binding”
Streptavidin Magnetic Beads and Agarose

Highest biotin-binding streptavidin magnetic beads and agarose on the market

- Highest biotin binding—enabled by unique streptavidin crosslinking
- Fast (<2 min) response time—saves time and accommodates viscous samples
- Versatile—ideal for a variety of applications

Magnetic Bead and Agarose

- Antibody-based cell separation
- IVD immunoassay development
- ChIP and DNA/RNA binding protein isolation
- Immunoprecipitation and protein isolation
- Next-gen sequencing target enrichment

Solulink offers streptavidin magnetic beads and agarose with the highest biotin-binding capacity on the market—beads with as much as 12X higher binding capacity and agarose at a 20% lower price than competitor products. Higher binding translates into reduced bead mass or agarose required to immobilize a biotinylated sample and lower background noise from nonspecific binding, resulting in better signals and lower net costs.

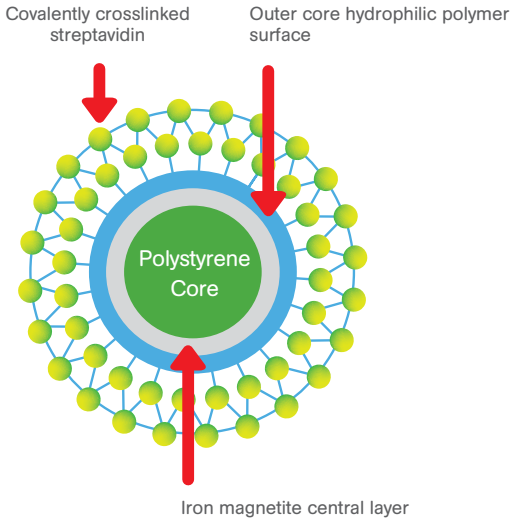

Figure 3. NanoLink™ (0.8 micron) and MagnaLink™ (2.8 micron) Streptavidin Magnetic Beads offer the highest biotin binding through unique crosslinked streptavidin.

The secret is in the crosslinking

Solulink NanoLink™ 0.8 micron and MagnaLink™ 2.8 micron magnetic beads are micron-sized, super-paramagnetic, hydrophilic polymer–encapsulated (no exposed iron), monodispersed microspheres with a uniform size distribution and a fast (<2 min) magnetic response time. They are stable in colloidal form and in detergents. The key to high biotin binding is in the unique covalently crosslinked streptavidin, based on Solulink's linking technology (Figure 3). The high surface area, when combined with our efficient linking chemistry, produces a consistent, ultra-high, biotin-binding bead (Table 1).

NanoLink™ Magnetic Beads provide high surface area

The high surface area of NanoLink™ 0.8 micron Magnetic Beads combined with our efficient linking chemistry, produces a consistent, ultra-high, biotin-binding bead (Figure 5 and Table 2). The high surface area makes NanoLink™ Steptavidin Magnetic Beads ideal for immobilizations and Co-IP applications.

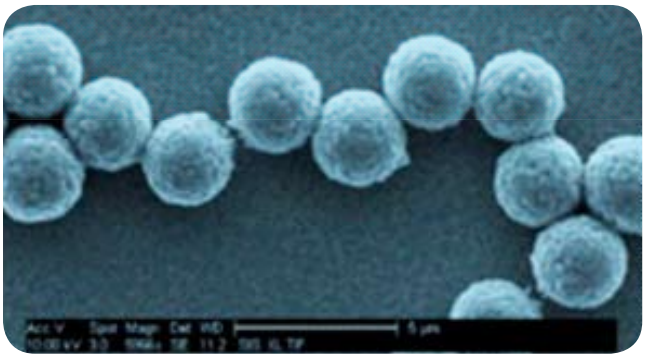

Figure 4. MagnaLink™ Streptavidin Magnetic Beads have exceptional size uniformity.

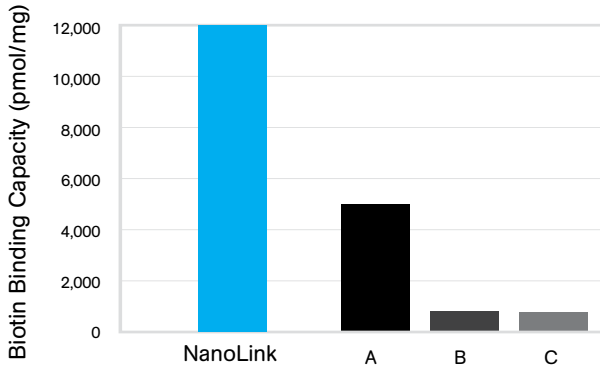

Figure 5. NanoLink™ advantage: Competitive landscape of free-biotin binding capacity.

Table 1. NanoLink™ and MagnaLink™ binding capacity

Molecule	NanoLink™ (0.8 µm) binding capacity	MagnaLink™ (2.8 µm) binding capacity
Free biotin	>14 nmol/mg	>12 nmol/mg
Biotinylated oligo (23-mer)	>2.5 nmol/mg	>0.8 nmol/mg
Biotinylated IgG (3 biotins per IgG)	>250 µg/mg	>112.6 µg/mg

MagnaLink™ beads demonstrate exceptional uniformity

MagnaLink™ 2.8 micron beads demonstrate exceptional size uniformity of <5% CV, evident by scanning electron microscopy (SEM) (Figure 4). Combined with the highest biotin-binding capacity, MagnaLink™ beads are ideal for high-throughput robotic applications.

Linker-activated beads enable easy user-designed immobilization

4FB and amino magnetic beads provide a high surface area activated with Solulink's 4FB linker or amino groups to enable easy covalent immobilization for user-defined, high-performance affinity purification schemes. The 4FB linker enables easy and efficient immobilization of any biomolecule premodified with Solulink's complementary HyNic linker (Cat. No. S-1002-105). Amino groups enable easy modification with any water-soluble NHS-ester, such as Solulink's Sulfo-S-4FB linker (Cat. No. S-1008-105).

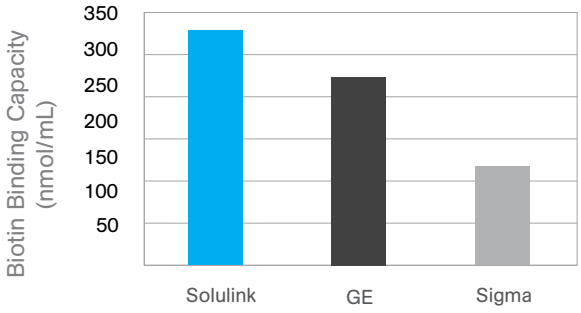

Figure 6. Comparison of streptavidin agarose free biotin binding capacity. Solulink binds 330 nmol/mL resin.

Free White Paper Download

How to Maximize the Capture of Biotinylated Targets with Streptavidin Magnetic Beads

Discusses assay improvement with the use of Solulink's high-binding streptavidin beads and compares Solulink beads to competitor products.

Download the paper at solulink.com/wp-beads

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Table 2. NanoLink™ binding capacity outperforms the competition

Ligand	NanoLink™ (0.8 µm) binding capacity	Competitor's (1 µm) binding capacity
Free biotin	>14,000 pmol/mg	>1,300 pmol/mg
Biotinylated oligo (23-mer)	>2.5 nmol/mg	NA
Biotinylated IgG (3 biotins per IgG)	>1.7 nmol/mg (250 µg/mg)	0.12 nmol/mg (20 µg/mg)

High biotin-binding streptavidin agarose

- High binding capacity—higher biotin binding capacity at >20% lower price
- Crosslinked agarose—Solulink's linker enables higher binding capacity, lower background, and less leaching
- Multiple sizes—available in 2 mL, 5 mL, 10 mL, and bulk quantities

Solulink's Streptavidin Agarose Ultra Performance™ provides high biotin binding at a low price. We used Solulink's linking technology coupled with a 6% highly crosslinked agarose to boost the biotin binding capacity of the high specific activity streptavidin. This ideal combination provides a biotin binding capacity of >330 nmol/mL of resin—one of the highest loading-capacity products currently available (Figure 6). Use Solulink's Streptavidin Agarose Ultra Performance™ for improved recovery of any biotinylated biomolecule and you can lower nonspecific binding, lower costs, and get better results.

BeadLink™ Kits for antibody-magnetic bead immobilization

Solulink's BeadLink™ Kits allow immobilization of 100 µg of an antibody on 1 mg of 4FB-NanoLink™ (0.8 µm magnetic beads) or 2 mg 4FB-MagnaLink™ (2.8 µm magnetic beads) with >90% efficiency. The mild reaction conditions and high immobilization efficiencies of Solulink's BeadLink™ Kits provide a novel and more efficient way of linking antibodies to beads compared to any other existing method (Figure 7).

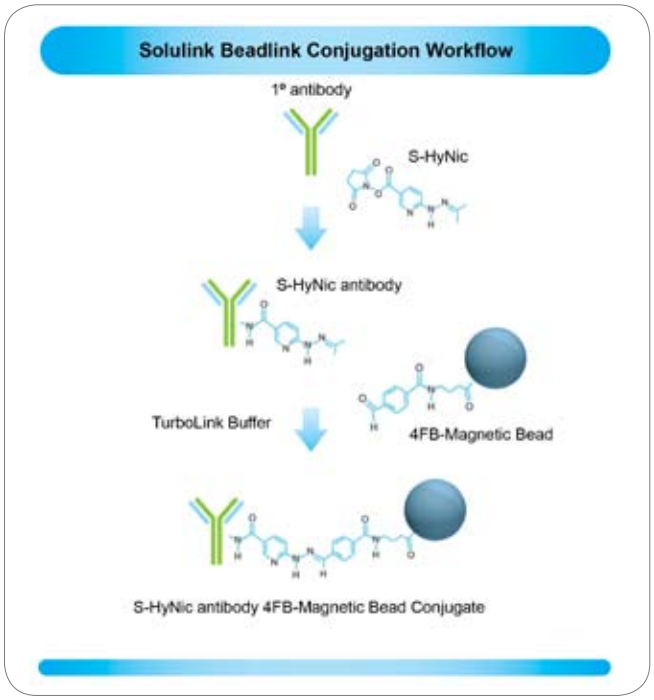

Figure 7. BeadLink™ Kit workflow.

Ordering Information

Product	Size	Cat. No.
NanoLink™ Magnetic Beads (0.8 µm)		
FEATURED NanoLink™ Streptavidin Magnetic Beads 0.8 µm	1 mL at 10 mg/mL	M-1002-010
NanoLink™ Streptavidin Magnetic Beads 0.8 µm	2 mL at 10 mg/mL	M-1002-020
NanoLink™ Streptavidin Magnetic Beads 0.8 µm	5 mL at 10 mg/mL	M-1002-050
NanoLink™ Streptavidin Magnetic Beads 0.8 µm	10 mL at 10 mg/mL	M-1002-100
FEATURED NanoLink™ Streptavidin Magnetic Beads 0.8 µm	100 mL at 10 mg/mL	M-1002-1000
NanoLink™ 4FB Magnetic Beads 0.8 µm	1 mL at 10 mg/mL	M-1001-010
NanoLink™ Amino Magnetic Beads 0.8 µm	1 mL at 10 mg/mL	M-1000-001
MagnaLink™ Magnetic Beads (2.8 µm)		
FEATURED MagnaLink™ Streptavidin Magnetic Beads 2.8 µm	1 mL at 10 mg/mL	M-1003-010
FEATURED MagnaLink™ Streptavidin Magnetic Beads 2.8 µm	2 mL at 10 mg/mL	M-1003-020
FEATURED MagnaLink™ Streptavidin Magnetic Beads 2.8 µm	5 mL at 10 mg/mL	M-1003-050
MagnaLink™ Streptavidin Magnetic Beads 2.8 µm	10 mL at 10 mg/mL	M-1003-100
MagnaLink™ Streptavidin Magnetic Beads 2.8 µm	100 mL at 10 mg/mL	M-1003-1000
MagnaLink™ 4FB Magnetic Beads 2.8 µm	1 mL at 10 mg/mL	M-1004-010
MagnaLink™ Amino Magnetic Beads 2.8 µm	1 mL at 10 mg/mL	M-1005-010
Streptavidin Agarose		
FEATURED Streptavidin Agarose Ultra Performance™	1 L	N-1000-1000
Streptavidin Agarose Ultra Performance	2 mL	N-1000-002
Streptavidin Agarose Ultra Performance	5 mL	N-1000-005
Streptavidin Agarose Ultra Performance	10 mL	N-1000-010
Streptavidin Agarose Ultra Performance	100 mL	N-1000-100
BeadLink™ Kits		
BeadLink Kits (NanoLink™)	immobilizes 100 µg of Ab	A-9404-001
BeadLink Kits (MagnaLink™)	immobilizes 100 µg of Ab	A-9404-002
Magnetic Stands		N-1000-1000
Magnetic Stand	holds 1.5 mL tube	S-6001-001

Product literature citations can be found on pages 37-41.

Scan to access more information, protocols, data sheets, MSDS, whitepapers, presentations, and citations or visit solulink.com/print-beads.

Get the free mobile app at http://gettag.mobi.

“In our hands, Solulink linkers have proven flexible and soundly designed products well tailored to customized production of bioconjugates. The conjugation chemistry has wide application, is simple to perform, stable in solution and can be conveniently prepared in stock for later usage. Solulink products are a valuable component of our laboratory toolbox.”

Research Director, Abgent

"Easy to Use and Quantify"

Biotin and Digoxigenin Antibody Labeling

Measurable biotinylation or digoxigenin boosts reproducibility

- First and only digoxigenin kit—adds multiplex IFC assay capability
- Reproducible results—UV-traceable chromophore permits nondestructive, rapid A_{280}/A_{354} quantification of incorporated biotin or digoxigenin, enabling consistency and reproducibility
- Extended PEG3 spacer—helps reduce aggregation, minimizes steric hindrance, and enhances solubility

Biotin and Digoxigenin Applications

- Enables multiplex IHC/IFC
- Next-gen sequencing target enrichment
- ELISA, IHC, and IF assay development
- IVD immunoassay development

ChromaLink™ Biotin or Digoxigenin contains a UV-traceable chromophore (Figure 9), based on Solulink's linking technology, to enable reproducibility in your labeling process. Now you can measure the degree of biotinylation in minutes, not hours, without the standard curves required for HABA/avidin and fluoro-reporter assays (Table 3, page 12). With a simple and direct UV scan, you can quantify biotin incorporation and ensure reproducible production of consistent batches (Figure 8). Pair ChromaLink™ labeling with Solulink's NanoLink™ Streptavidin Magnetic Beads (Cat. No. M-1002-010) for many types of assay development.

Quantitative measurement of bound biotin

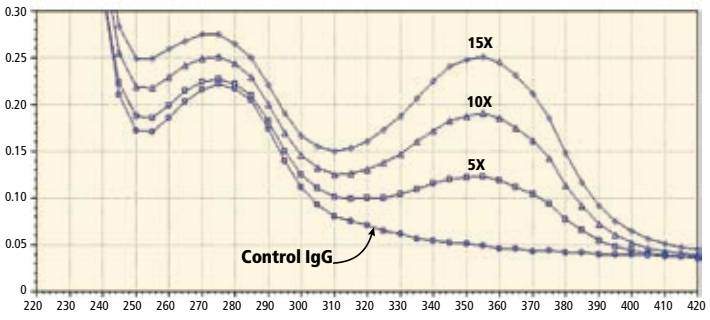

Figure 8. Superimposed spectra of desalted bovine IgG that was biotinylated using ChromaLink™ Biotin at various biotin to protein mole equivalents (5X, 10X, and 15X).

The ChromaLink™ Biotin Labeling Kit

The ChromaLink™ Biotin Labeling Kit includes everything you need to biotinylate your antibody: buffers, spin columns, and an easy-to-follow protocol. With the ChromaLink™ Biotin Labeling Kit, you can biotinylate and purify up to 5 antibodies or proteins ranging in molecular weight from 20–200 kDa from as little as 25 µg to as much as 2 mg in about 2.5 hours. The resulting biotinylated antibody is ready for binding to streptavidin (Figure 10).

The ChromaLink™ Digoxigenin One-Shot Antibody Labeling Kit

The ChromaLink™ Digoxigenin One-Shot Labeling Kit includes buffers, spin columns, and a simple protocol. With this kit, you can label and purify 100 µg of antibody or proteins ranging in molecular weight from 20–200 kDa in about 2.5 hours (Figure 11).

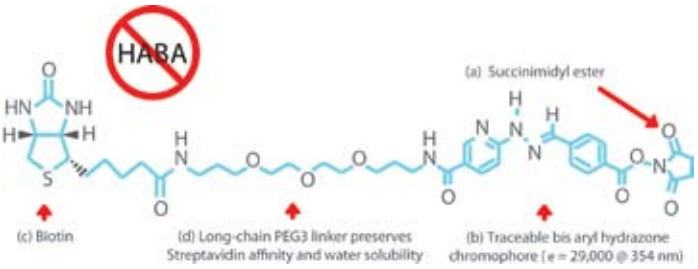

Figure 9. ChromaLink™ Biotin.

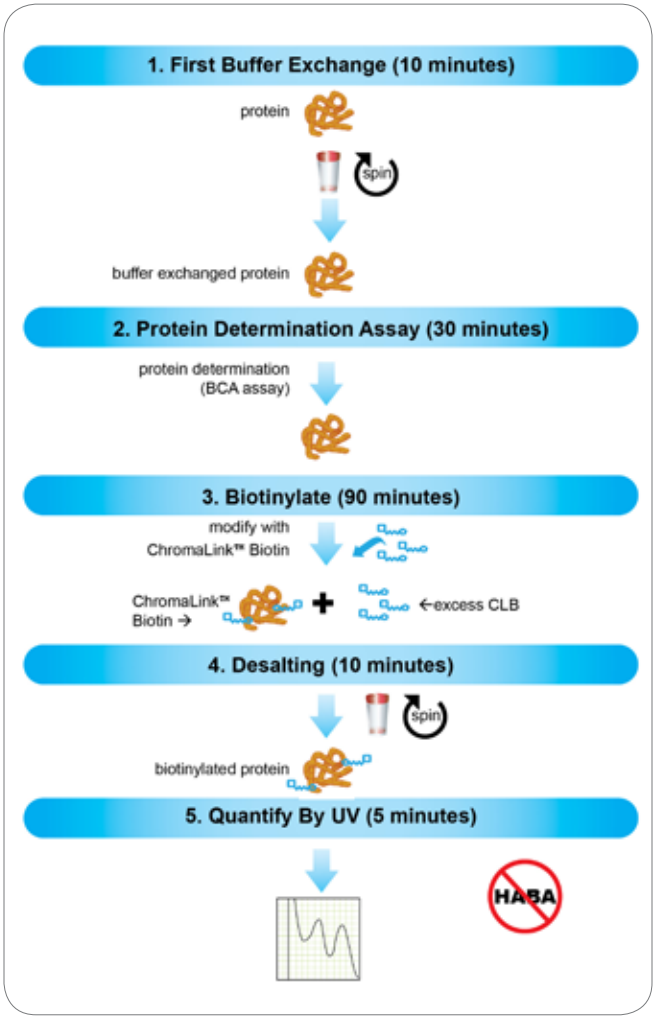

Figure 10. ChromaLink™ Biotin Labeling Kit workflow.

The first measurable digoxigenin kit

Digoxigenin has long been used as an alternative hapten reporter system to the streptavidin/biotin system. In recent times, this reporter system has also been used side-by-side with the biotin-streptavidin system for the detection of multiple antigens (Figure 12).

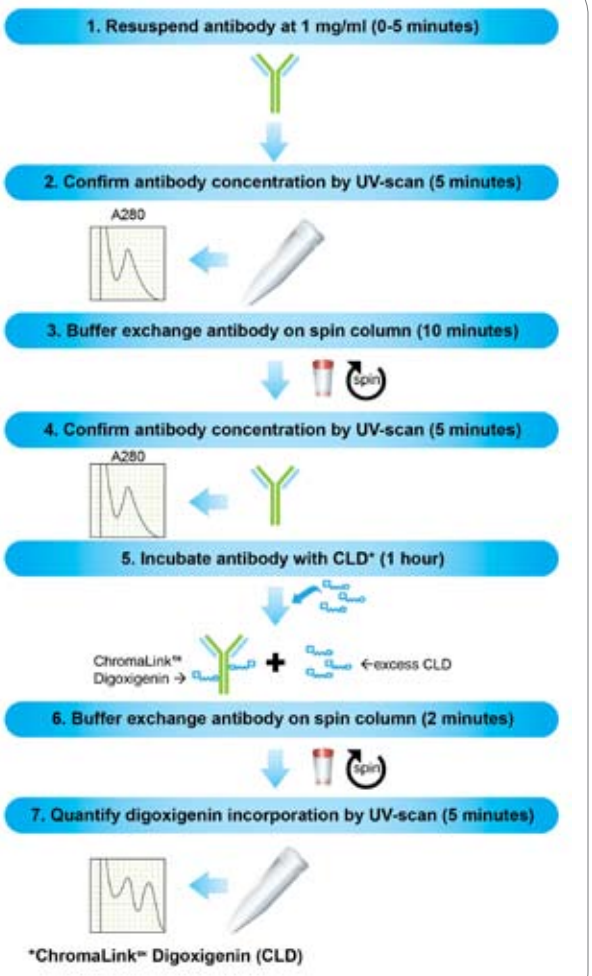

Figure 11. ChromaLink™ Digoxigenin One-Shot Antibody Labeling Kit workflow.

Free White Paper Download

How to Biotinylate with Reproducible Results

Describes limitations with traditional biotinylation reagents and how Solulink's ChromaLink™ biotin overcomes these limitations to enable fast, easy quantitation of biotinylation.

Download the paper at solulink.com/wp-biotin

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Multiplex IHC technique

We have developed a novel technique for triple-labeling immunofluorescence IHC that can be used with primary antibodies derived from a single host source. This novel technique provides an excellent spectral separation of colors depicting different antigens of interest while avoiding cross-reactivity between irrelevant primary and secondary antibodies. In addition, this multiplexed IHC technique provides significant convenience to researchers who have at their disposal only primary antibodies raised in the same host species.

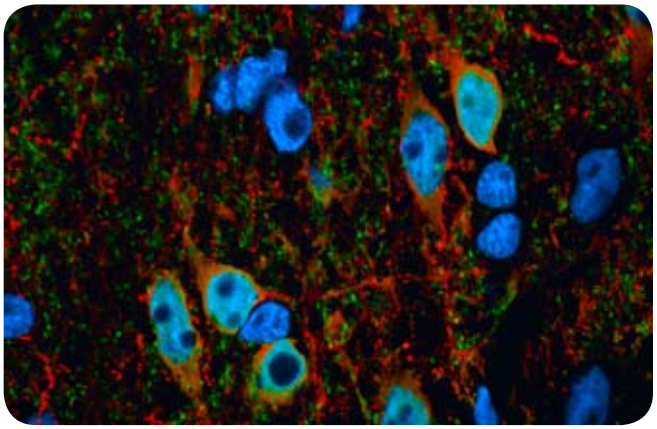

Figure 12. Novel multi-color immunofluorescence technique using primary antibodies raised in the same host species (mouse). The mouse primary antibodies were labeled using ChromaLink™ Biotin and ChromaLink™ Digoxigenin.

Table 3. ChromaLink™ Biotin Labeling Kit outperforms the competition

	Solulink ChromaLink™ Biotin Labeling Kit	Pierce EZ-Link Sulfo-NHS-Blotinylation Kit
Biotinylation Time	2.5 hours	2.5 hours
Quantification of Biotin	5 minute UV Scan ***Free***	3 hour HABA Assay ***$140***

Ordering Information

Product	Size	Cat. No.
Biotin		
ChromaLink™ Biotin Labeling Kit	Kit - labels 25 µg to 1 mg	B-9007-105K
ChromaLink™ One-Shot Antibody Biotinylation Kit	Kit - labels 100 µg of Ab	B-9007-009K
ChromaLink™ One-Shot Antibody Biotinylation Kit (Large Scale)	Large-Scale - labels 2 mg of Ab	B-9007-020
ChromaLink™ One-Shot Antibody Biotinylation Kit (Custom Size)	Labels any amount	Please inquire
ChromaLink™ Biotin Labeling Reagent (Sulfo Version Water Soluble)	10 mg	B-1007-110
ChromaLink™ Biotin Labeling Reagent (Sulfo Version Water Soluble)	5 x 1.0 mg	B-1007-105
ChromaLink™ Biotin Labeling Reagent (DMF Soluble)	10 mg	B-1001-010
ChromaLink™ Biotin Labeling Reagent (DMF Soluble)	5 x 1.0 mg	B-1001-105
ChromaLink™ Biotin Malemide Reagent	10 mg	B-1012-010
Digoxigenin		
ChromaLink™ Digoxigenin One-Shot Antibody Labeling Kit	Kit - labels 100 µg of Ab	B-9014-009K
ChromaLink™ Digoxigenin One-Shot Antibody Labeling Kit	Large-Scale - labels 2 mg	B-9014-020K

Product literature citations can be found on pages 37-41.

Scan to access more information, protocols, data sheets, MSDS, whitepapers, presentations, and citations or visit solulink.com/print-biotin.

Get the free mobile app at http://gettag.mobi.

"Brilliant!"

Antibody Labeling Kits

No chromatography required

- Fast conjugations—fast catalyzed method generates conjugates in approximately 4–6 hours
- Efficient—100% conversion with 40–75% yields
- Quantifiable—UV-traceable bond for simple and direct quantification (biotin and DIG)

Antibody Labeling Applications

- Flow cytometry assay development
- Western blot
- Immunofluorescence staining

Solulink's Antibody Labeling Kits and All-in-One Conjugation Kits offer an innovative, efficient, easy-to-use method based on Solulink's linking technology, delivering 100% purified and ready-to-use direct-labeled antibody conjugates (Figure 13). Designed to be easy to use, these kits are perfect regardless of your level of experience with conjugation. They eliminate the need for lengthy FPLC or HPLC, so you can focus more on downstream applications.

No chromatography

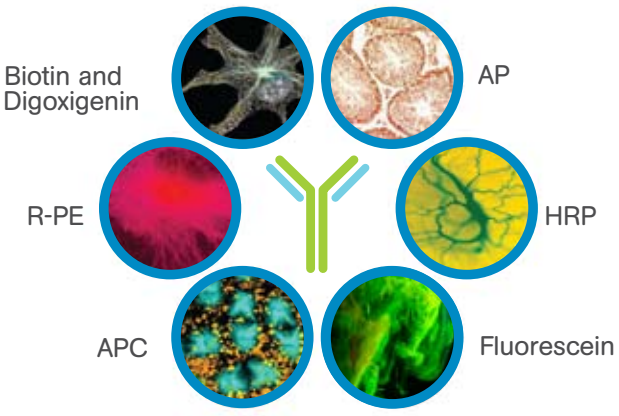

Figure 13. Labels available for antibody labeling with Solulink linking technology.

How it works

Solulink's linking technology is based on the use of two complementary heterobifunctional linkers:

- S-HyNic (succinimidyl-6-hydrazino-nicotinamide) linker, an NHS-ester, reacts with lysine residues, incorporating HyNic functional groups (hydrazinonicotinamide) onto the antibody.

- S-4FB (succinimidyl-4-formylbenzamide) linker is conjugated to the label, providing a pre-activated, high-activity label (example, 4FB-HRP).

HyNic-modified antibody is incubated with pre-activated 4FB label (example, 4FB-HRP) leading to rapid and efficient conversion of the antibody to conjugate through formation of stable bis-arylhydrazone bonds (Figure 14).

Catalyzed conjugation

Solulink's All-in-One Conjugation Kits are available for HRP, AP, and R-PE antibody labeling. They incorporate TurboLink™ catalyst, aniline, into Solulink's linking technology, delivering 100% conversion of antibody to conjugate. This reaction takes place under mild conditions and increases the rate and efficiency of the labeling reaction, leading to quantitative conversion of free antibody to conjugate. The complete absence of free antibody at the end of the catalyzed reaction leaves only two components in excess: label and conjugate.

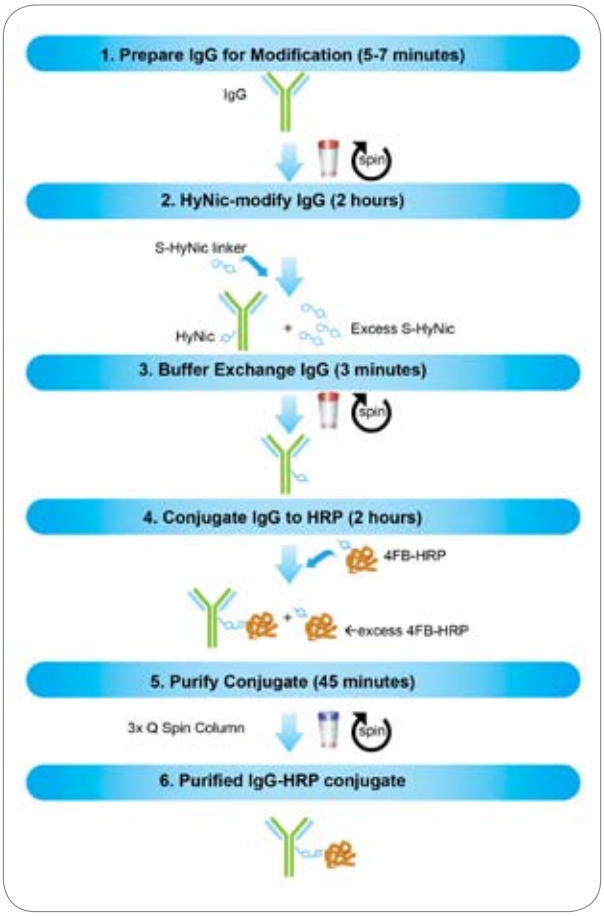

Figure 14. HRP-Antibody All-in-One Conjugation Kit workflow.

Novel purification

The HRP and R-PE Antibody All-in-One Conjugation Kits offer a high-yield purification method without HPLC. After conjugation, a novel Q spin filter is used that quantitatively removes excess HRP or R-PE to provide high-purity, ready-to-use conjugate. Purified conjugate is then eluted from the filter membrane, free of residual antibody and label in high yield.

A variety of formats to fit your needs

Solulink antibody labeling kits are available in a variety of formats to match your labeling requirements (Table 4).

Free White Paper Download

How to Prepare High-Quality HRP Conjugates

Discusses limitations of traditional linker technologies and the advantages of using Solulink's catalyzed linker technology to prepare highly pure protein-poly HRP complexes.

Download the paper at solulink.com/wp-hrp

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Table 4. Conjugate yields

Cat. No.	Product Name	Starting Antibody Amount	TurboLink™	Q Spin Column	Yield
A-9002-001	HRP-Antibody All-in-One Conjugation Kit	100 µg			50–70 µg
A-9302-001	HRP-Antibody All-in-One Conjugation Kit	5 mg	●	●	2.5–3.5 mg
A-9402-001	RapidDirect™ Primary Antibody polyHRP Labeling Kit	75-100 µg	●	●	High yield
A-9105-001	AP-Antibody All-in-One Conjugation Kit	100 µg	●		40–60 µg
A-9001-006	R-PE Antibody All-in-One Conjugation Kit	100 µg	●		>50 mg
P-9903-001	APC-Antibody Conjugation Kit	500 µg	●		200–300 µg
F-9001-009K	Fluorescein One-Shot Antibody Labeling Kit	100 µg			70 µg

Ordering Information

Product	Size	Cat. No.
HRP		
HRP-Antibody All-in-One Conjugation Kit	Kit - conjugates 2 x 100 µg Ab	A-9002-001
HRP-Antibody All-in-One Conjugation Kit	Kit - conjugates 5 mg Ab (Large Scale Kit)	A-9302-001
RapidDirect™ Primary Antibody polyHRP Labeling Kit	Conjugates 1 x 100 µg Ab	A-9402-001
AP		
AP-Antibody All-in-One Conjugation Kit	Kit - conjugates 2 x 100 µg Ab	A-9105-001
R-PE, APC, and Fluorescein		
R-PE Antibody All-in-One Conjugation Kit	Kit - conjugates 2 x 100 µg Ab	A-9001-006
R-PE-Antibody Conjugation Kit	Kit - conjugates 2 x 0.5 mg Ab	P-9002-002
APC-Antibody Conjugation Kit	Kit - conjugates 2 x 0.5 mg Ab	P-9903-001
Fluorescein One-Shot Antibody Labeling Kit	Kit - labels 2 x 100 µg of Ab	F-9001-009K
Biotin		
ChromaLink™ Biotin Labeling Kit	Kit - labels 25 µg to 1 mg	B-9007-105K
ChromaLink™ One-Shot Antibody Biotinylation Kit	Kit - labels 100 µg of Ab	B-9007-009K
Digoxigenin		
ChromaLink™ Digoxigenin One-Shot Antibody Labeling Kit	Kit - labels 100 µg of Ab	B-9014-009K

Product literature citations can be found on pages 37-41.

Scan to access more information, protocols, data sheets, MSDS, whitepapers, presentations, and citations or visit solulink.com/print-ab-label.

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"First Ever"

Antibody-Oligonucleotide All-in-One Conjugation Kit

The first easy-to-use kit to conjugate antibodies with oligos

- High yield—30–50% yield based on starting antibody
- High purity— >95% purity without chromatographic purification
- High stability—conjugates are stable for >1 year

Antibody-Oligonucleotide Applications

- ImmunoPCR
- High-sensitivity protein detection
- Antibody arrays

The Antibody-Oligonucleotide All-in-One Conjugation Kit offers a first-ever kit with TurboLink™ catalyzed conjugation based on Solulink's linking technology, to prepare antibody-oligonucleotide conjugates without chromatography. This novel kit includes buffers, spin columns, and a calculator to determine MSR. No column chromatography is required. With the Antibody-Oligonucleotide All-in-One Conjugation Kit, you can generate high-purity conjugates virtually free of residual antibody or oligonucleotide (>95% conjugate).

How it works

Solulink's linking technology is based on the use of two complementary heterobifunctional linkers:

1. Amine-modified, 20 to 60-mer oligonucleotide is modified using an excess of the S-4FB linker. This reactive NHS-ester incorporates a 4FB (aromatic aldehyde functional group, formylbenzamide) at the desired terminus of the oligonucleotide.

2. Polyclonal or monoclonal antibody (100 µg) is modified using the S-HyNic linker. This NHS-ester reacts with lysine residues, incorporating HyNic functional groups (hydrazino-nicotinamide) onto the antibody.

3. The two modified biomolecules are mixed together in the presence of the TurboLink™ catalyst, aniline, leading to rapid and efficient conversion of the antibody to conjugate through formation of stable bis-arylhydrazone bonds, followed by magnetic-affinity, solid phase purification.

4. The antibody-oligonucleotide conjugate is ready for use in the most demanding and sensitive applications (Figure 15).

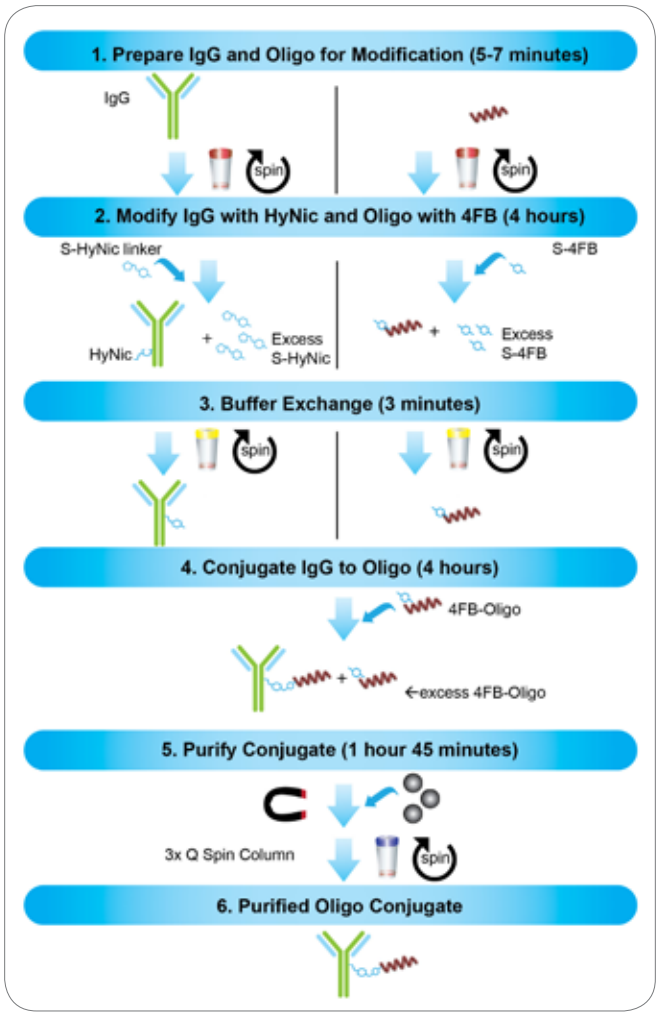

Figure 15. The Antibody-Oligonucleotide All-in-One Conjugation Kit workflow.

Antibody-Oligonucleotide All-in-One Conjugation Kit

Free White Paper Download

Antibody-Oligonucleotide Conjugate Preparation

How to prepare Antibody-Oligo conjugates efficiently in high yields and purity without chromatography.

Download the paper at solulink.com/wp-aboligo

solulink

Ordering Information

Product	Size	Cat. No.
Antibody-Oligonucleotide All-in-One Conjugation Kit	Kit - conjugates 100 µg of antibody	A-9202-001

Product literature citations can be found on pages 37-41.

Scan to access more information, protocols, data sheets, MSDS, whitepapers, presentations, and citations or visit solulink.com/print-ab-oligo.

Get the free mobile app at http://gettag.mobi.

“We use oligo-conjugated antibodies for sensitive protein measurements with proximity ligation assays and our related assays. The synthesis and purification of these antibody-oligo probes was a major bottleneck for us until we began using the Solulink Antibody-Oligo All-in-One Conjugation Kits. These kits have helped immensely, providing us with a highly efficient, standardized approach for probe synthesis.”

Assistant Professor, Auburn University
Department of Chemistry and Biochemistry

Citation:
Paper was recently accepted into JACS (http://pubs.acs.org/doi/pdf/10.1021/ja3000485), which has an impact factor of 9.023.

"Absolute Linkability"

Crosslinking Reagents and Kits

Your link to everything

- Fast conjugations—TurboLink™ catalyst means faster kinetics for higher efficiency and yields
- Efficient—>80% efficient linker-biomolecule conjugations
- Stable and robust—conjugate bond is stable to 92˚C and to pH values ranging from pH 2.0 – 10.0

Crosslinking Reagent and Kit

- IVD immunoassay development
- Sample preparation
- Assay development

Solulink's linker technology (Figure 16) enables faster and quantitative conjugation of biomolecules with higher efficiencies and yields. Solulink uses an innovative two-linker strategy:

- HyNic (6-hydrazino-nicotinic acid, an aromatic hydrazine)
- 4FB (4-formylbenzoate, an aromatic aldehyde)

In Figure 2 on page 2, biomolecule 1 is linked to HyNic, and biomolecule 2 is linked to 4FB, through primary amines or thiols on proteins, oligos, peptides, carbohydrates, or surfaces.

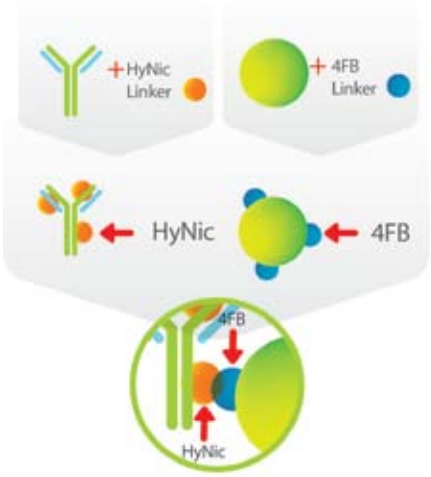

Figure 16. Solulink's easy-to-use, linker-based technology.

Mixing of the two biomolecules, with TurboLink™ catalyst, allows the two linkers to rapidly, selectively, and efficiently react with each other. The result is two biomolecules conjugated through a UV-traceable, stable bond (bis-arylhydrazone) with measurable absorbance at 354 nm. Any two proteins, oligos, peptides, etc., regardless of molecular weights, can be efficiently conjugated. Solulink linkers are available as reagents or bead products in easy-to-use kits or in bulk quantities to research and commercial organizations worldwide to enable next-generation biomedical assays and detection systems (Table 5, page 23).

The All Purpose Crosslinking Kit

The All Purpose Crosslinking Kit provides the fundamentals—HyNic and S-4FB—of Solulink's linker technology, offering greater efficiency and yield in a considerably simpler conjugation method. Use S-HyNic and S-4FB to easily link together any two proteins, peptides, oligos, beads, or surfaces (Figure 17).

The Protein-Protein Conjugation Kit

The Protein-Protein Conjugation Kit is designed to easily and efficiently conjugate two proteins together. This kit is flexible so that researchers with little or no conjugation experience can make their own custom protein-protein conjugates to suit their needs. It includes all of the necessary components—including S-HyNic and S-4FB—and protocols for easy and specific crosslinking of any protein with any other protein of a different size greater than 7 kDa (Figure 18).

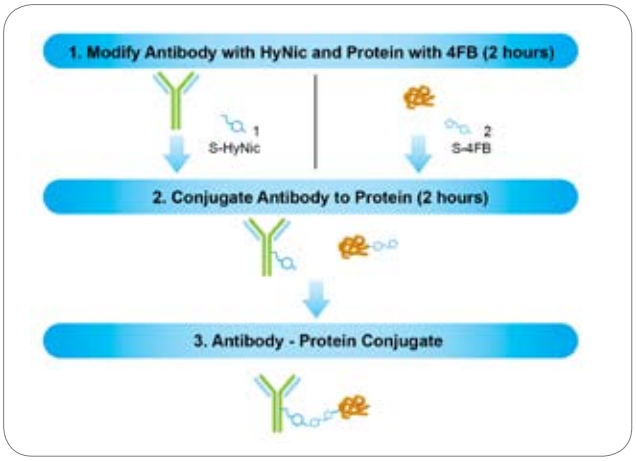

Figure 17. All-Purpose Crosslinking Kit workflow.

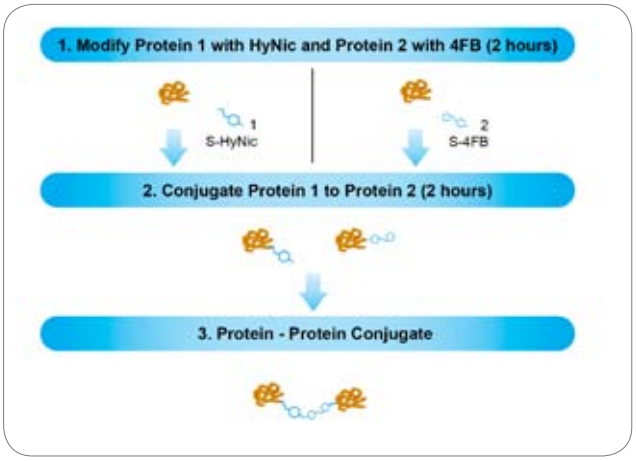

Figure 18. Protein-Protein Conjugation Kit workflow.

Free White Paper Download

Bioconjugation Primer: Why Solulink Linkers?

Explains benefits of Solulink's catalyzed linker technology to link all biomolecules to each other or surfaces.

Download the paper at solulink.com/wp-primer

The Protein-Oligo Conjugation Kit

The Protein-Oligo Conjugation Kit is designed to easily and efficiently prepare two separate protein-oligo conjugates. This kit is flexible so that researchers with little or no conjugation experience can make their own custom protein-oligo conjugates to suit their needs. It includes all of the necessary components—including S-HyNic and S-4FB—and protocols for easy and specific crosslinking of any protein with any oligo up to 100 base pairs in length (Figure 19).

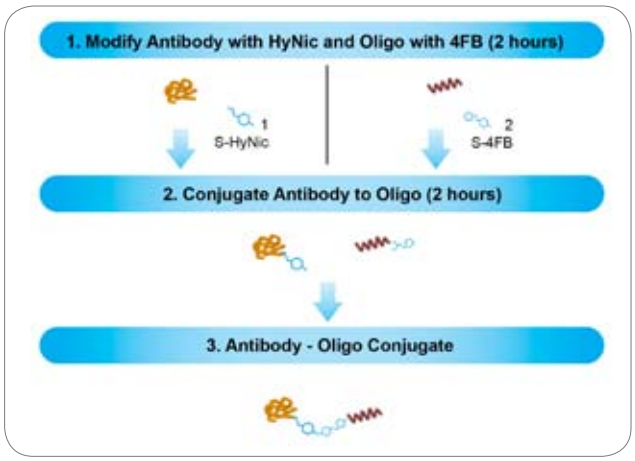

Figure 19. Protein-Oligo Conjugation Kit workflow.

Table 5. Linker selection guide

A - Type of conjugate	B - Type of molecule	C - Reactive group		D - Solulink product
Antibody-Protein	Ab	If using an Amino (NH2) then use:	**Linker 1**	S-HyNic [S-1002-105]
		If using a Thiol (SH2) then use:		MHPH [S-1009-010]
	Protein	If using an Amino (NH2) then use:	**Linker 2**	S-4FB [S-1004-105]
		If using a Thiol (SH2) then use:		MTFB [S-1035-105]
Protein-Oligo	Protein	If using an Amino (NH2) then use:	**Linker 1**	S-HyNic [S-1002-105]
		If using a Thiol (SH2) then use:		MHPH [S-1009-010]
	Oligo	If using a 3' or 5' Amino, then use:	**Linker 2**	S-4FB [S-1004-105]
		If using 4FB-phosphoramidite then use:		4FB Phosphoramidite [S-1005-250] *call
Protein-Peptide	Protein	If using an Amino (NH2) then use:	**Linker 1**	S-4FB [S-1004-105]
		If using an Amino (NH2) then use:		MTFB [S-1035-105]
	Peptide	If using N-terminus, then use:	**Linker 2**	BOC-HyNic [S-3003-100]
		If using C-terminus, then use:		6-FMOC Lysine [S-3034-100]
Oligo-Peptide	Oligo	If using a 3' or 5' Amino, then use:	**Linker 1**	S-4FB [S-1004-105] or sulfo-S-4FB [S-1008-105]
		If using a 3' or 5' Amino, then use:		SS-S-4FB [S-1037-105] cleavable
		If using 4FB-phosphoramidite, then use:		4FB Phosphoramidite [S-1005-250] *call
	Peptide	If using N-terminus, then use:	**Linker 2**	BOC-HyNic [S-3003-100]
		If using C-terminus, then use:		6-FMOC Lysine (6-BOC-HyNic) OH [S-3034-100]
Protein-NanoLink™ Beads conjugation	NanoLink™ Beads	If using 4FB NanoLink™ Beads, then use:	**Linker 1**	NanoLink™ Beads [M-1001-010]
	Ab, other protein, R-PE, APC, perCP, HRP, AlkPhos	If using an Amino (NH2) then use	**Linker 2**	S-HyNic [S-1002-105]
		If using a Thiol (SH2) then use:		MHPH [S-1009-010]
NanoLink™ Beads-peptide conjugation	NanoLink™ Beads	If using 4FB NanoLink™ Beads, then use:	**Linker 1**	NanoLink™ Beads [M-1001-010]
	Peptide	If using N-terminus, then use:	**Linker 2**	BOC-HyNic [S-3003-100]
		If using C-terminus, then use:		6-FMOC Lysine (6-BOC-HyNic) OH [S-3034-100]

Instructions: Solulink technology requires two linkers to successfully conjugate 2 biomolecules to give you a quantifiable, controllable and stable result.

Step 1: Select type of conjugate (A)

Step 2: Select the 1st biomolecule (B) then select its reactive group (C) The Solulink product you will need appears in the same row in column D. (LINKER 1)

Step 3: Select the 2nd biomolecule (B) then select its reactive group (C) The Solulink product you will need appears in the same row in column D. (LINKER 2)

Step 4: Order the products referenced in steps 2 and 3 for a successful conjugation.

Ordering Information

Product	Size	Cat. No.
Kits		
All Purpose Crosslinking Kit	Kit	S-9002-1
Protein-Protein Conjugation Kit	Kit	S-9010-1
Protein-Oligo Conjugation Kit	Kit - 2 conjugations	S-9011-1
HyNic		
S-HyNic Crosslinker (DMF Soluble)	5 x 1.0 mg	S-1002-105
S-HyNic Crosslinker (DMF Soluble)	10 mg	S-1002-010
Sulfo S-HyNic Crosslinker (Water Soluble)	5 x 1.0 mg	S-1011-105
Sulfo S-HyNic Crosslinker (Water Soluble)	10 mg	S-1011-010
C6-S-HyNic Crosslinker	10 mg	S-1010-010
C6-S-HyNic Crosslinker	5 x 1.0 mg	S-1010-105
S-4FB Crosslinker (DMF Soluble)	5 x 1.0 mg	S-1004-105
S-4FB Crosslinker (DMF Soluble)	10 mg	S-1004-010
Sulfo-S-4FB Crosslinker (Water Soluble)	5 x 1.0 mg	S-1008-105
Sulfo-S-4FB Crosslinker (Water Soluble)	10 mg	S-1008-010
C6-S-4FB Crosslinker	5 x 1.0 mg	S-1007-105
C6-S-4FB Crosslinker	10 mg	S-1007-010
PEG4/PFB Long Chain Crosslinker (4FB analog)	10 mg	S-1034-010
PEG4/PFB Long Chain Crosslinker (4FB analog)	5 x 1.0 mg	S-1034-105
S-SS-4FB Cleavable Crosslinker	10 mg	S-1037-010
S-SS-4FB Cleavable Crosslinker	5 x 1 mg	S-1037-105
Surface linkers and other linkers		
HyNic Silane	25 mg	HL-1002-025
4FB Silane	25 mg	HL-1004-025
SHNH Crosslinker (HyNic for Technitium Labeling)	10 mg	S-1001-010
SHTH Crosslinker (Heat Stable HyNic)	10 mg	S-1003-010
4FB-Phosphoramidite	250 mg	S-1005-250
A4FB-Phosphoramidite (oligo synthesis)	50 mg	S-1013-050
A4FB-Phosphoramidite (oligo synthesis)	250 mg	S-1013-250
A4FB-Phosphoramidite (oligo synthesis)	1,000 mg	S-1013-1000
MHPH (Maleimide HyNic) Crosslinker	10 mg	S-1009-010

Product literature citations can be found on pages 37-41.

Scan to access more information, protocols, data sheets, MSDS, whitepapers, presentations, and citations or visit solulink.com/print-crosslink.

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"Super Stable"
Peptide and Oligo Linking Products

Unlimited peptide linking possibilities

Peptides have been used in biotechnology in the following applications:

- Epitope tags—for protein purification and detection
- Cell penetrating peptides—for delivery of proteins, nucleic acids, siRNA, or drugs into the cytoplasm of cells

Peptide and Oligo Linking Applications

- Protein purification and detection
- Transfection alternative
- Therapeutic peptide development

Solulink applies its linker technology to peptide conjugation for linking peptides to any biomolecule or surface to improve purification, detection, delivery, or targeting.

S-HyNic Peptide Incorporation

Solulink offers modified HyNic (6-hydrazinonicotinamide) for incorporation onto peptides during solid or solution phase synthesis or onto a small molecule, surface, or polymer where acid-labile protection is required. HyNic-modified peptides are readily conjugated to 4FB-modified biomolecules.

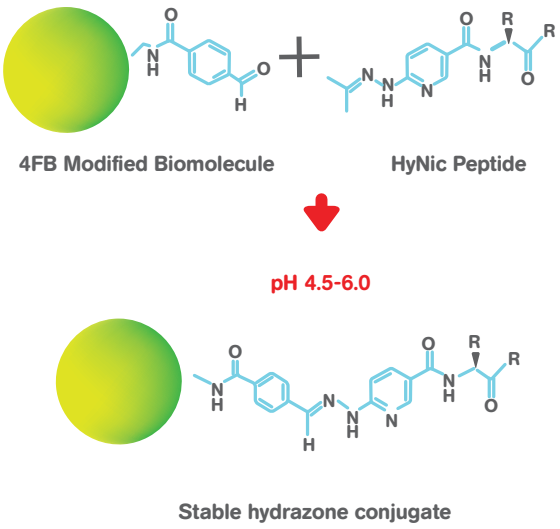

Figure 20. Biomolecule-peptide conjugation scheme.

4FB-modified Reagents

Solulink offers a collection of 4FB modified biomolecules for conjugation to HyNic modified peptides.

PepLink™ Linkable Peptides

Solulink's PepLink™ Linkable Peptides are pre-activated with Solulink's HyNic linker and can be readily conjugated to biomolecules, carriers, or surfaces modified with the 4FB linker (Figure 20). Solulink also supplies the HyNic linker in formats that can be easily conjugated to your peptide of interest.

PepLink™ Epitope Tags

Epitope tags are short 10–15 amino acid sequences fused to a recombinant protein to enable surveillance by commonly available antibodies to the epitope tag. Solulink's PepLink Linkable Peptides enable tagging of non-recombinant proteins with popular epitope tags for immunocytochemistry or cellular trafficking. The PepLink epitope tag provides a non-biotin based, affinity tagging method for the soft-release or detection of tagged, non-recombinant proteins. Available tags include His6, S-Tag, c-Myc, and FLAG.

PepLink™ Cell Penetrating Peptides

Cell penetrating peptides (CPPs) have experimentally demonstrated delivery of therapeutic agents e.g., proteins, siRNAs, or drugs into the cytoplasm. Solulink offers an alternative to transfection reagents by conjugating cell penetrating peptides to biological payloads for subsequent intracellular delivery and release. Available CPPs include TAT and ARG8.

Free White Paper Download

A New Generation of Peptide Conjugation Products

Explains the use of Solulink's catalyzed linker technology to link peptides to proteins, oligos, and to surfaces—adding linkers after or during peptide synthesis.

Download the paper at solulink.com/wp-peptides

Ordering Information

Product	Size	Cat. No.
S-HyNic Peptide Incorporation		
6 BOC HNA (6-BOC-hydrazinonicotinic acid)	100 mg	S-3003-100
6 BOC HNA (6-BOC-hydrazinonicotinic acid)	500 mg	S-3003-500
6-BOC-HNA-OSu (succinimidyl 6-BOC-hydrazinonicotinic acid)	100 mg	S-3002-100
6-BOC-HNA-OSu (succinimidyl 6-BOC-hydrazinonicotinic acid)	250 mg	S-3002-250
6-FMOC-HNA (6-FMOC-hydrazinonicotinic acid)	100 mg	S-3004-100
6-FMOC-HNA (6-FMOC-hydrazinonicotinic acid)	250 mg	S-3004-250
6-FMOC-HNA (6-FMOC-hydrazinonicotinic acid)	500 mg	S-3004-500
6-FMOC-HNA-OSu (succinimidyl 6-FMOC-hydrazinonicotinate)	100 mg	S-3001-100
FMOC Lysine-ε-(6-BOC-HyNic)OH	100 mg	S-3034-100
FMOC Lysine-ε-(6-BOC-HyNic)OH	500 mg	S-3034-500
PepLink™ Epitope Tags		
6xHis Tag-HyNic	0.5 mg	SP-E001-005
6xHis Tag-HyNic	1.0 mg	SP-E001-010
S-Tag-HyNic	0.5 mg	SP-E002-005
S-Tag-HyNic	1.0 mg	SP-E002-010
C-Myc Tag-HyNic	0.5 mg	SP-E003-005
C-Myc Tag-HyNic	1.0 mg	SP-E003-010
FLAG Tag-HyNic	0.5 mg	SP-E004-005
FLAG Tag-HyNic	1.0 mg	SP-E004-005
PepLink™ Cell Penetrating Peptides		
TAT-HyNic	0.5 mg	SP-C002-005
TAT-HyNic	1.0 mg	SP-C002-010
HyNic-ARG8-NH2	0.5 mg	SP-C001-005
HyNic-ARG8-NH2	1.0 mg	SP-C001-010

Product *(continued)*	Size	Cat. No.
4FB-modified Reagents		
NanoLink™ 4FB Magnetic Beads 0.8 µm	1 mL at 10 mg/mL	M-1001-010
Fluorescein/PEG3/4FB	10 mg	S-4006-010
4FB Activated R-PE	1 mg	S-4008-001
4FB Activated R-PE	3 mg	S-4008-003
4FB Activated APC	1 mg	S-4009-001
4FB Activated APC	3 mg	S-4009-003
4FB Silane	25 mg	HL-1004-025
4FB Phosphoramidite	250 mg	SP-E004-005
Sulfo-S-4FB Crosslinker	5 x 1.0 mg	S-1008-105
Sulfo-S-4FB Crosslinker	10 mg	S-1008-010
S-4FB Crosslinker	5 x 1.0 mg	S-1004-105
C6-S-4FB Crosslinker	5 x 1.0 mg	S-1007-105
C6-S-4FB Crosslinker	10 mg	S-1007-010
S-SS-4FB Cleavable Crosslinker	10 mg	S-1037-010
S-SS-4FB Cleavable Crosslinker	5 x 1.0 mg	S-1037-105
PEG4/PFB Long Chain Crosslinker	10 mg	S-1034-010
PEG4/PFB Long Chain Crosslinker	5 x 1.0 mg	S-1034-105

Product literature citations can be found on pages 37-41.

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“Publication-Quality Blots–First Time”

Western Blot Products

Say “good-bye” to secondary antibodies

- Publication-quality blots the first time
- Far less background—does not detect antibody contaminants on blot, such as light and heavy chains
- Significant time savings of 1.5 hours per blot or IHC tissue staining

Western Blot Applications

- Western blots
- IP westerns
- Immunoblots
- ELISPOT
- ELISAs

Western blot detection with secondary HRP antibodies can be simple to perform, but can also be time consuming and produce significant background banding. Background bands obscure visualization of the target antigen, limiting sensitivity of the primary antibody, especially for detection of low-abundant proteins. Solulink’s RapidDirect™ Kits offer direct labeling of any user-provided primary antibody with polyHRP (3–5 HRP proteins attached to each antibody) eliminating the need for secondary antibodies, and thus interfering bands. Using a primary polyHRP antibody conjugate yields a stronger signal and allows detection of antigens masked by heavy and light chains of a primary antibody.

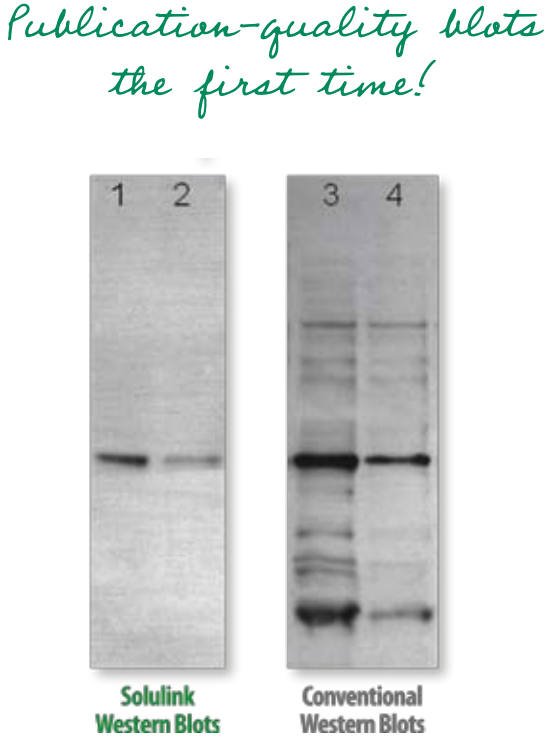

Figure 21. RapidDirect™ produces publication-quality blots the first time.

RapidDirect™ Primary Antibody polyHRP Western Blot Kit

Solulink's RapidDirect™ Primary Antibody polyHRP Western Blot Kit uses direct labeling of HRP to the anti-antigen antibody in near quantitative yield, producing a highly sensitive one-step detection reagent. No purification. No secondary antibodies needed for downstream applications. This eliminates the root cause of the interfering bands resulting from binding of detecting reagents to heavy and light chains of antibodies and other proteins on the blot membrane (Figure 21).

This kit converts 75-100 µg of primary antibody to primary antibody polyHRP conjugate, requiring only pipettes and a microcentrifuge. The kit yields enough antibody-HRP conjugate for the development of 10–40 western blots depending on the inherent affinity of the primary antibody. Ideal for those that use the same antibody for multiple western blot or immunoassay applications with the additional benefit of time savings (Figure 22 and Figure 23).

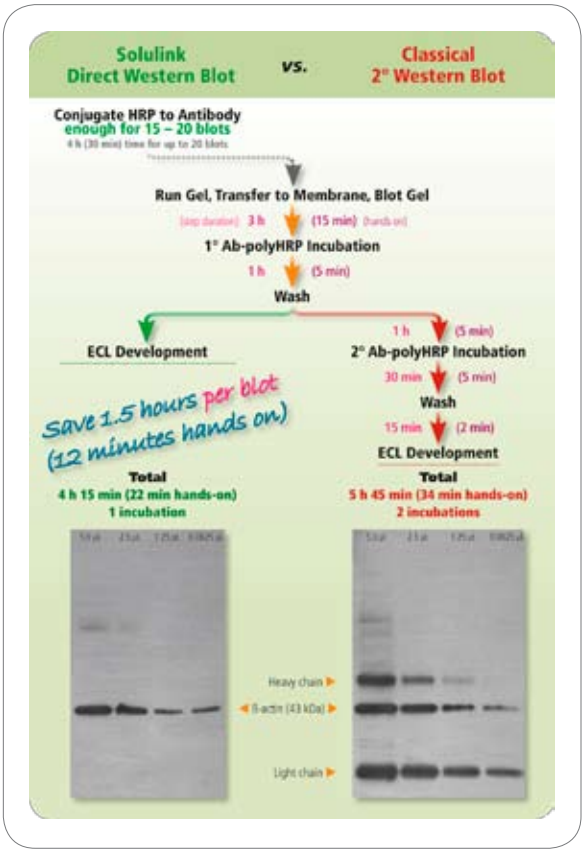

Figure 22. Time-saving RapidDirect™ workflow.

RapidDirect™ Primary Antibody polyHRP IP/Western Blot Kits

Solulink's RapidDirect™ Primary Antibody polyHRP IP/Western Blot Kit uses direct labeling of HRP to the anti-antigen antibody in near quantitative yield, producing a highly sensitive one-step detection reagent. The primary antibody-HRP/antigen complex is immobilized by α-species IgG immobilized on NanoLink™ magnetic beads.

This kit converts 75–100 µg of primary antibody to primary antibody polyHRP conjugate. The final conjugate allows, at minimum, development of 10–40 western blots. IP westerns are ideal for detecting low-copy antigens.

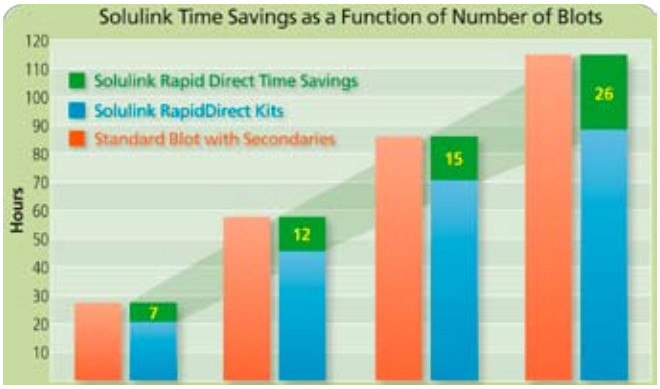

Figure 23. RapidDirect™ saves time over secondary antibody-based methods.

Free White Paper Download

How to Get Publication Quality Western Blots the First Time

Compares standard western blot method with a new method that does not use secondary antibodies and therefore has no background heavy and light chain bands and no need for time consuming secondary antibody incubations

Download the paper at solulink.com/wp-western

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Ordering Information

Product	Size	Cat. No.
RapidDirect™ Primary Antibody polyHRP Western Blot Kit	Kit - 10-40 blots	A-9401-001
RapidDirect™ Primary Antibody polyHRP IP/Western Blot Kits	Goat anti-mouse 10–40 blots	A-9403-001A
RapidDirect™ Primary Antibody polyHRP IP/Western Blot Kits	Goat anti-rabbit 10–40 blots	A-9403-001B
RapidDirect™ Primary Antibody polyHRP IP/Western Blot Kits	Rabbit anti-goat 10–40 blots	A-9403-001C

Product literature citations can be found on pages 37-41.

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"We have successfully used the versatile linker, HyNic to modify proteins of interest, namely mouse serum albumin and ovalbumin, and subsequently conjugate the intermediate to a small molecule containing an aromatic aldehyde to form a stable hydrazone product. The reactions were found to be reproducible and convenient to perform. The final products were easily characterized by UV spectrophotometry to determine the extent of conjugation. HyNic is the most versatile and convenient linker reagent we have found for our protein-small molecule modifications."

Project Medicinal Chemist, Medicine
Moores Cancer Center, UCSD

“A+ Results”

Conjugation Services

Your link to service.

- Antibody conjugations and direct labeling
- Peptide conjugations: oligo-peptide, protein-peptide, peptide immobilization
- Antibody, protein, AP, and HRP conjugations
- Antibody-oligo conjugations
- siRNA conjugations
- Solid surface conjugations
- Bead conjugations

At Solulink, we pride ourselves on making the most user-friendly, least time-consuming conjugation kits on the market. But no matter how much we simplify the process, sometimes you just don’t have the time to perform your own conjugations. We’re here to help.

Using Solulink’s linking technology, Solulink’s conjugation experts can perform your conjugations to any antibody, oligo, protein, peptide, or solid surface (Table 6).

We can deliver a supply of custom conjugates to your specifications at regular intervals or in bulk quantities. Just call us and describe your conjugation project and we’ll provide you with estimated turnaround time and pricing for our custom services.

Custom Synthesis and Contract Conjugation Services

Solulink Contract Conjugation Services has been contracted by scientists worldwide in both industry and academia to prepare a wide range of conjugates. If you have a unique chemical compound to make, Solulink organic chemists can provide the specialty synthesis expertise to make that compound in small amounts or in bulk. In many cases, our clients have found that Solulink was the only company able to offer the necessary services to prepare their conjugates. For a quote, contact us.

Solulink staff at your service.

Table 6. Examples of Solulink conjugations

Conjugate	Use
Oligonucleotide-antibody conjugates	ImmunoPCR
Oligonucleotide-KLH conjugates	Production of anti-oligonucleotide antibodies
Carbohydrate-KLH conjugates	Production of anti-carbohydrate antibodies
Bacterial carbohydrate-bead conjugates	Diagnostic assays
siRNA-antibody conjugates with disulfide cleavable linker	siRNA delivery
siRNA-cationic peptide conjugates	siRNA delivery
Drug-protein conjugates	Drug delivery
Drug-KLH conjugates	Immunodetection

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"Columns, Buffers, TurboLink™ & More..."

Accessories

Time-saving components to help you reach your ultimate research goals...quickly

Solulink provides components supplied in kits separately for purchase as stand-alone reagents. Materials required, but not supplied, are also available. These products include TurboLink™, modification buffers, conjugation buffers, spin filters, desalting columns, and quenching reagents. If you cannot find a component you need or need an extra or replacement component, please contact us.

Product	Size	Cat No.
TurboLink™ Catalyst Buffer	1.5 mL	S-2006-105
Conjugation Buffer (10X)	5 x 1.5 mL	S-4002-005
Modification Buffer (10X)	5 x 1.5 mL	S-4000-005
MES Buffer (10X)	5 x 1.5 mL	S-4026-105
Bead Block Solution	25 mL	S-4023
Zeba Desalting Columns	10 pack	S-4024-010
PBS Buffer (10X)	5 x 1.5 mL	S-4017-105
Vivaspin Diafiltration Spin Filters, 5K MWCO	10 pack	S-4004-010
Anhydrous DMF	5 x 1.5 mL	S-4001-005
6-HNA (6-hydrazinonicotinic acid)	100 mg	S-2003-100
2- Sulfobenzaldehyde	100 mg	S-2005-100
2- Hydrazinopyridine.dihydrochloride	100 mg	S-2002-100

Product literature citations can be found on pages 37-41.

Scan to access more information, protocols, data sheets, MSDS, whitepapers, presentations, and citations or visit solulink.com/print-accessories.

Get the free mobile app at http://gettag.mobi.

"I've used a couple of Solulink products extensively, mainly S-HyNic and S-4FB and PFB-PEG4-4FB to do some mAb modification and cross-linking. We started the research in late 2009/early 2010. We've seen good results, and we currently have a manuscript under review describing the work.

I adapted some of the procedures in the technical documents to work with much smaller volumes (eg, 10 uL rxn volume for the MSR assay and UV-vis recording on a NanoDrop spectrometer) in order to conserve my relatively expensive Abs."

Research Associate II
Wafic Said Molecular Cardiology Research Laboratory
Texas Heart Institute at St. Luke's Episcopal Hospital

Citation
Paper was recently accepted into Bioconjugate Chemistry (http://pubs.acs.org/doi/abs/10.1021/bc200309h).

"Highest Binding"

Streptavidin Magnetic Beads and Agarose

NanoLink™ Streptavidin Magnetic Beads (M-1002-010)

1. Fowler DM, Araya CL, Fleishman SJ, Kellogg EH, Stephany JJ, Baker D, Fields S. High-resolution mapping of protein sequence-function relationships. Nature Methods 2010;7(9):741-6.
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5. Branchini BR, Ablamsky DM, Rosenberg JC. Chemically modified firefly luciferase is an efficient source of near-infrared light. Bioconjug Chem. 2010;21(11):2023-30.
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MagnaLink™ Streptavidin Magnetic Beads (M-1003-010)

1. Jensen RB, Carreira A, Kowalczykowski SC. Purified human BRCA2 stimulates RAD51-mediated recombination. Nature 2010;467(7316):678-683.

"Easy to Use and Quantify"

Biotin and Digoxigenin Antibody Labeling

ChromaLink™ biotin N-hydroxysuccinimidyl ester (B-1007)

1. Srinivasan B, Li Y, Jing Y, et al. A detection system based on giant magnetoresistive sensors and high-moment magnetic nanoparticles demonstrates zeptomole sensitivity: potential for personalized medicine. Angew. Chem. Int. Ed. Engl. 2009;48(15):2764-2767.

ChromaLink™ Biotin Labeling Reagent DMF Soluble (B-1001)

1. Hauwel M, Bettinger T, Allémann E. Use of Microbubbles as Ultrasound Contrast Agents for Molecular Imaging. Ultrasound Contrast Agents 2010;Chapter 2:13-23.
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5. Dirksen A, Yegneswaran S, and Dawson PE. Bisaryl Hydrazones as Exchangeable Biocompatible Linkers. Angew. Chem. Int. Ed. 2010,49,2023–2027.

"Easy to Use and Quantify"

Biotin and Digoxigenin Antibody Labeling (continued)

ChromaLink™ Biotin Labeling Kit (B-9007-105K)

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"Absolute Linkability"

Crosslinking Reagents and Kits

SHNH Crosslinker (S-1001)

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4. Fella C. Dynamic and effective gene vectors via pH-sensitive PEG-shielding. 2008. Doctoral thesis, Ludwig-Maximilians-Universitaet-Muenchen. 101 p.

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"Absolute Linkability"

Crosslinking Reagents and Kits (continued)

All Purpose Crosslinking Kit with S-HyNic (S-9002)

8. Qi H, Cannons JL, Klauschen F, Schwartzberg PL, Germain RN. SAP-controlled T–B cell interactions underlie germinal centre formation. Nature 2008;455(7214):764-769.

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2-hydrazinopyride (S-2002)

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"Absolute Linkability"

Crosslinking Reagents and Kits (continued)

Maleimide HyNic (MHPH) (S-1009)

1. Kwong GA, Radu CG, Hwang K, Shu CJ, Ma C, Koya RC, Comin-Anduix B, Hadrup SR, Bailey RC, Witte ON. Modular nucleic acid assembled p/MHC microarrays for multiplexed sorting of antigen-specific T cells. Journal of the American Chemical Society 2009;131(28):9695-9703.

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SHNH Crosslinker (S-1002); S-4FB Crosslinker (S-1004)

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S-HyNic Silane Crosslinker (HL-1002); S-4FB Crosslinker (S-1004)

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1. Vardar-Schara G, Krab IM, Yi G, Su WW. A homogeneous fluorometric assay platform based on novel synthetic proteins. Biochemical and biophysical research communications 2007;361(1):103-108.

"Absolute Linkability"

Crosslinking Reagents and Kits (continued)

C6-4FB (S-1007); All Purpose Crosslinking Kit with S-HyNic (S-9002-1)

1. Liu G, Dou S, Mardirossian G, He J, Zhang S, Liu X, Rusckowski M, Hnatowich DJ. Successful Radiotherapy of Tumor in Pretargeted Mice by 188Re-Radiolabeled Phosphorodiamidate Morpholino Oligomer, a Synthetic DNA Analogue. Clinical Cancer Research,2006;12(16)4958-4964.

2. Liu G, Dou S, He J, Yin D, Gupta S, Zhang S, Wang Y, Rusckowski M, Hnatowich DJ. Radiolabeling of MAG3-morpholino oligomers with 188Re at high labeling efficiency and specific radioactivity for tumor pretargeting. Applied Radiation and Isotopes;2006;971-978.

Maleimide HyNic (MHPH) (S-1009); S-4FB Crosslinker (S-1004)

1. Kwong GA, Radu CG, Hwang K, Shu CJ, Ma C, Koya RC, Comin-Anduix B, Hadrup SR, Bailey RC, Witte ON. Modular nucleic acid assembled p/MHC microarrays for multiplexed sorting of antigen-specific T cells. Journal of the American Chemical Society 2009;131(28):9695-9703.

Maleimide HyNic (MHPH) (S-1009); Maleimide 4FB (MTFB) (S-1035-105)

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6-FMOC-hydrozinonicotinic acid (S-3004)

1. Dadachova E, Moadel T, Schweitzer AD, Bryan RA, Zhang T, Mints L, Revskaya E, Huang X, Ortiz G, Nosanchuk JS, Nosanchuk JD, Casadevall A. Radiolabeled Melanin-Binding Peptides are Safe and Effective in Treatment of Human Pigmented Melanoma in a Mouse Model of Disease. Cancer Biotherapy;2006;21(2):117-128.

"Super Stable"

Peptide and Oligo Linking Products

6-Boc-HyNic-Osu (S-3002)

1. Zhang Y, Xiao L, Chordia MD, Locke LW, Williams MB, Berr SS, Pan D. Neutrophil targeting heterobivalent SPECT imaging probe: cFLFLF-PEG-TKPPR-99mTc. Bioconjug Chem. 2010;21(10):1788-93.

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“We recently were able to link our TLR agonist to a phospolipid via your Solulink method. These hybrid molecules can be incorporated into nanoparticle formulations with the great advantage that the incorporation of the conjugate into the nanoparticle can be quantified via UV absorbance mearurements which do not interfere with the other components of the complex particle. I highly recommend your linker method for this application.”

Senior Project Scientist
University of California, San Diego

Ordering Information

To order, contact Solulink through email at orders@solulink.com, or fax at +1.858.625.0770, telephone at +1.858.625.0670, or use the website at www.solulink.com.

Magnetic Beads and Agarose

Product	Size	Cat No.
NanoLink™ Magnetic Beads (0.8 µm)		
FEATURED NanoLink™ Streptavidin Magnetic Beads 0.8 µm	1 mL at 10 mg/mL	M-1002-010
NanoLink™ Streptavidin Magnetic Beads 0.8 µm	2 mL at 10 mg/mL	M-1002-020
NanoLink™ Streptavidin Magnetic Beads 0.8 µm	5 mL at 10 mg/mL	M-1002-050
NanoLink™ Streptavidin Magnetic Beads 0.8 µm	10 mL at 10 mg/mL	M-1002-100
FEATURED NanoLink™ Streptavidin Magnetic Beads 0.8 µm	100 mL at 10 mg/mL	M-1002-1000
NanoLink™ 4FB Magnetic Beads 0.8 µm	1 mL at 10 mg/mL	M-1001-010
NanoLink™ Amino Magnetic Beads 0.8 µm	1mL at 10 mg/mL	M-1000-001
MagnaLink™ Magnetic Beads (2.8 µg)		
FEATURED MagnaLink™ Streptavidin Magnetic Beads 2.8 µm	1 mL at 10 mg/mL	M-1003-010
FEATURED MagnaLink™ Streptavidin Magnetic Beads 2.8 µm	2 mL at 10 mg/mL	M-1003-020
FEATURED MagnaLink™ Streptavidin Magnetic Beads 2.8 µm	5 mL at 10 mg/mL	M-1003-050
MagnaLink™ Streptavidin Magnetic Beads 2.8 µm	10 mL at 10 mg/mL	M-1003-100
MagnaLink™ Streptavidin Magnetic Beads 2.8 µm	100 mL at 10 mg/mL	M-1003-1000
MagnaLink™ 4FB Magnetic Beads 2.8 µm	1 mL at 10 mg/mL	M-1004-010
MagnaLink™ Amino Magnetic Beads 2.8 µm	1 mL at 10 mg/mL	M-1005-010
Streptavidin Agarose		
FEATURED Streptavidin Agarose Ultra Performance™	1 L	N-1000-1000
Streptavidin Agarose Ultra Performance	2 mL	N-1000-002
Streptavidin Agarose Ultra Performance	5 mL	N-1000-005
Streptavidin Agarose Ultra Performance	10 mL	N-1000-010
Streptavidin Agarose Ultra Performance	100 mL	N-1000-100
BeadLink™ Kits		
BeadLink Kits (NanoLink™)	immobilizes 100 µg of Ab	A-9404-001
BeadLink Kits (MagnaLink™)	immobilizes 100 µg of Ab	A-9404-002
Magnetic Stands		N-1000-1000
Magnetic Stand	holds 1.5 mL tube	S-6001-001

Ordering Information

Biotin and Digoxigenin Antibody Labeing

Product	Size	Cat. No.
Biotin		
ChromaLink™ Biotin Labeling Kit	Kit - labels 25 µg to 1 mg	B-9007-105K
ChromaLink™ One-Shot Antibody Biotinylation Kit	Kit - labels 100 µg of Ab	B-9007-009K
ChromaLink™ One-Shot Antibody Biotinylation Kit (Large Scale)	Large-Scale - labels 2 mg of Ab	B-9007-020
ChromaLink™ One-Shot Antibody Biotinylation Kit (Custom Size)	Labels any amount	Please inquire
ChromaLink™ Biotin Labeling Reagent (Sulfo Version Water Soluble)	10 mg	B-1007-110
ChromaLink™ Biotin Labeling Reagent (Sulfo Version Water Soluble)	5 x 1.0 mg	B-1007-105
ChromaLink™ Biotin Labeling Reagent (DMF Soluble)	10 mg	B-1001-010
ChromaLink™ Biotin Labeling Reagent (DMF Soluble)	5 x 1.0 mg	B-1001-105
ChromaLink™ Biotin Malemide Reagent	10 mg	B-1012-010
Digoxigenin		
ChromaLink™ Digoxigenin One-Shot Antibody Labeling Kit	Kit - labels 100 µg of Ab	B-9014-009K
ChromaLink™ Digoxigenin One-Shot Antibody Labeling Kit	Large-Scale - labels 2 mg	B-9014-020K

Antibody Labeling

Product	Size	Cat. No.
HRP		
HRP-Antibody All-in-One Conjugation Kit	Kit - conjugates 2 x 100 µg Ab	A-9002-001
HRP-Antibody All-in-One Conjugation Kit	Kit - conjugates 5 mg Ab (Large Scale Kit)	A-9302-001
RapidDirect Primary Antibody polyHRP Labeling Kit	Conjugates 1 x 100 µg Ab	A-9402-001
AP		
AP-Antibody All-in-One Conjugation Kit	Kit - conjugates 2 x 100 µg Ab	A-9105-001
R-PE, APC, and Fluorescein		
R-PE Antibody All-in-One Conjugation Kit	Kit - conjugates 2 x 100 µg Ab	A-9001-006
R-PE-Antibody Conjugation Kit	Kit - conjugates 2 x 0.5 mg Ab	P-9002-002
APC-Antibody Conjugation Kit	Kit - conjugates 2 x 0.5 mg Ab	P-9903-001
Fluorescein One-Shot Antibody Labeling Kit	Kit - labels 2 x 100 µg of Ab	F-9001-009K
Biotin		
ChromaLink™ Biotin Labeling Kit	Kit - labels 25 µg to 1 mg	B-9007-105K
ChromaLink™ One-Shot Antibody Biotinylation Kit	Kit - labels 100 µg of Ab	B-9007-009K
Digoxigenin		
ChromaLink™ Digoxigenin One-Shot Antibody Labeling Kit	Kit - labels 100 µg of Ab	B-9014-009K

Antibody-Oligonucleotide Conjugation Kit

Product	Size	Cat. No.
Antibody-Oligonucleotide All-in-One Conjugation Kit	Kit- conjugates 100 µg of antibody	A-9202-001

Crosslinking Kits and Regents

Product	Size	Cat. No.
Kits		
All Purpose Crosslinking Kit	Kit	S-9002-1
Protein-Protein Conjugation Kit	Kit	S-9010-1
Protein-Oligo Conjugation Kit	Kit - 2 conjugations	S-9011-1
HyNic		
S-HyNic Crosslinker (DMF Soluble)	5 x 1.0 mg	S-1002-105
S-HyNic Crosslinker (DMF Soluble)	10 mg	S-1002-010
Sulfo S-HyNic Crosslinker (Water Soluble)	5 x 1.0 mg	S-1011-105
Sulfo S-HyNic Crosslinker (Water Soluble)	10 mg	S-1011-010
C6-S-HyNic Crosslinker	10 mg	S-1010-010
C6-S-HyNic Crosslinker	5 x 1.0 mg	S-1010-105
S-4FB Crosslinker (DMF Soluble)	5 x 1.0 mg	S-1004-105
S-4FB Crosslinker (DMF Soluble)	10 mg	S-1004-010
Sulfo-S-4FB Crosslinker (Water Soluble)	5 x 1.0 mg	S-1008-105
Sulfo-S-4FB Crosslinker (Water Soluble)	10 mg	S-1008-010
C6-S-4FB Crosslinker	5 x 1.0 mg	S-1007-105
C6-S-4FB Crosslinker	10 mg	S-1007-010
PEG4/PFB Long Chain Crosslinker (4FB analog)	10 mg	S-1034-010
PEG4/PFB Long Chain Crosslinker (4FB analog)	5 x 1.0 mg	S-1034-105
S-SS-4FB Cleavable Crosslinker	10 mg	S-1037-010
S-SS-4FB Cleavable Crosslinker	5 x 1 mg	S-1037-105
Surface linkers and other linkers		
HyNic Silane	25 mg	HL-1002-025
4FB Silane	25 mg	HL-1004-025
SHNH Crosslinker (HyNic for Technitium Labeling)	10 mg	S-1001-010
SHTH Crosslinker (Heat Stable HyNic)	10 mg	S-1003-010
4FB-Phosphoramidite	250 mg	S-1005-250
A4FB-Phosphoramidite (oligo synthesis)	50 mg	S-1013-050
A4FB-Phosphoramidite (oligo synthesis)	250 mg	S-1013-250
A4FB-Phosphoramidite (oligo synthesis)	1,000 mg	S-1013-1000
MHPH (Maleimide HyNic) Crosslinker	10 mg	S-1009-010

Peptide and Oligo Linking Products

Product	Size	Cat. No.
S-HyNic Peptide Incorporation		
6 BOC HNA (6-BOC-hydrazinonicotinic acid)	100 mg	S-3003-100
6 BOC HNA (6-BOC-hydrazinonicotinic acid)	500 mg	S-3003-500
6-BOC-HNA-OSu (succinimidyl 6-BOC-hydrazinonicotinic acid)	100 mg	S-3002-100
6-BOC-HNA-OSu (succinimidyl 6-BOC-hydrazinonicotinic acid)	250 mg	S-3002-250
6-FMOC-HNA (6-FMOC-hydrazinonicotinic acid)	100 mg	S-3004-100
6-FMOC-HNA (6-FMOC-hydrazinonicotinic acid)	250 mg	S-3004-250
6-FMOC-HNA (6-FMOC-hydrazinonicotinic acid)	500 mg	S-3004-500
6-FMOC-HNA-OSu (succinimidyl 6-FMOC-hydrazinonicotinate)	100 mg	S-3001-100
FMOC Lysine-ε-(6-BOC-HyNic)OH	100 mg	S-3034-100
FMOC Lysine-ε-(6-BOC-HyNic)OH	500 mg	S-3034-500
PepLink™ Epitope Tags		
6xHis Tag-HyNic	0.5 mg	SP-E001-005
6xHis Tag-HyNic	1.0 mg	SP-E001-010
S-Tag-HyNic	0.5 mg	SP-E002-005
S-Tag-HyNic	1.0 mg	SP-E002-010
C-Myc Tag-HyNic	0.5 mg	SP-E003-005
C-Myc Tag-HyNic	1.0 mg	SP-E003-010
FLAG Tag-HyNic	0.5 mg	SP-E004-005
FLAG Tag-HyNic	1.0 mg	SP-E004-005
PepLink™ Cell Penetrating Peptides		
TAT-HyNic	0.5 mg	SP-C002-005
TAT-HyNic	1.0 mg	SP-C002-010
HyNic-ARG8-NH2	0.5 mg	SP-C001-005
HyNic-ARG8-NH2	1.0 mg	SP-C001-010
4FB-modified Reagents		
NanoLink™ 4FB Magnetic Beads 0.8 µm	1 mL at 10 mg/mL	M-1001-010
Fluorescein/PEG3/4FB	10 mg	S-4006-010
4FB Activated R-PE	1 mg	S-4008-001
4FB Activated R-PE	3 mg	S-4008-003
4FB Activated APC	1 mg	S-4009-001
4FB Activated APC	3 mg	S-4009-003
4FB Silane	25 mg	S-1005-250
4FB Phosphoramidite	250 mg	SP-E004-005
Sulfo-S-4FB Crosslinker	5 x 1.0 mg	S-1008-105

Peptide and Oligo Linking Products *(continued)*

Product *(continued)*	Size	Cat. No.
Sulfo-S-4FB Crosslinker	10 mg	S-1008-010
S-4FB Crosslinker	5 x 1.0 mg	S-1004-105
C6-S-4FB Crosslinker	5 x 1.0 mg	S-1007-105
C6-S-4FB Crosslinker	10 mg	S-1007-010
S-SS-4FB Cleavable Crosslinker	10 mg	S-1037-010
S-SS-4FB Cleavable Crosslinker	5 x 1.0 mg	S-1037-105
PEG4/PFB Long Chain Crosslinker	10 mg	S-1034-010
PEG4/PFB Long Chain Crosslinker	5 x 1.0 mg	S-1034-105

Western Blot Products

Product	Size	Cat. No.
RapidDirect™ Primary Antibody polyHRP Western Blot Kit	Kit - 10-40 blots	A-9401-001
RapidDirect™ Primary Antibody polyHRP IP/Western Blot Kits	Goat anti-mouse 10-40 blots	A-9403-001A
RapidDirect™ Primary Antibody polyHRP IP/Western Blot Kits	Goat anti-rabbit 10-40 blots	A-9403-001B
RapidDirect™ Primary Antibody polyHRP IP/Western Blot Kits	Rabbit anti-goat 10-40 blots	A-9403-001C

Custom Conjugation Services

Product	Size	Cat. No.
Custom Conjugation Services	N/A	Please inquire

Accessories

Product	Size	Cat. No.
TurboLink™ Catalyst Buffer	1.5 mL	S-2006-105
Conjugation Buffer (10X)	5 x 1.5 mL	S-4002-005
Modification Buffer (10X)	5 x 1.5 mL	S-4000-005
MES Buffer (10X)	5 x 1.5 mL	S-4026-105
Bead Block Solution	25 mL	S-4023
Zeba Desalting Columns	10 pack	S-4024-010
PBS Buffer (10X)	5 x 1.5 mL	S-4017-105
Vivaspin Diafiltration Spin Filters, 5K MWCO	10 pack	S-4004-010
Anhydrous DMF	5 x 1.5 mL	S-4001-005
6-HNA (6-hydrazinonicotinic acid)	100 mg	S-2003-100
2- Sulfobenzaldehyde	100 mg	S-2005-100
2- Hydrazinopyridine.dihydrochloride	100 mg	S-2002-100

Products available in bulk quantities

Product	Size	Cat. No.
Magnetic Beads and Agarose		
NanoLink™ Streptavidin Magnetic Beads 0.8 µm	100 mL at 10 mg/mL	M-1002-1000
MagnaLink™ Streptavidin Magnetic Beads 2.8 µm	100 mL at 10 mg/mL	M-1003-1000
Streptavidin Agarose Ultra Performance™	100 mL	N-1000-100
Biotin		
ChromaLink™ Biotin Labeling Kit, Large Scale	2 mg	B-9007-020K
ChromaLink™ Biotin Labeling Reagent (Water Soluble)	10 mg	B-1007-110
ChromaLink™ Biotin Labeling Reagent (DMF Soluble)	10 mg	B-1001-010
Digoxigenin		
ChromaLink™ Digoxigenin One-Shot Antibody Labeling Kit	Large-scale labels 2 mg	B-9014-020K
Antibody Labeling Kits		
HRP-Antibody All-in-One Conjugation Kit	Kit - conjugates 5 mg Ab (large scale kit)	A-9302-001
Custom Kits		
Custom Kits	Custom sizes	Please inquire

Simplify Scale-Up and Production with Bulk Quantities

Bulk sizes, custom packaging, and custom labeling now available.

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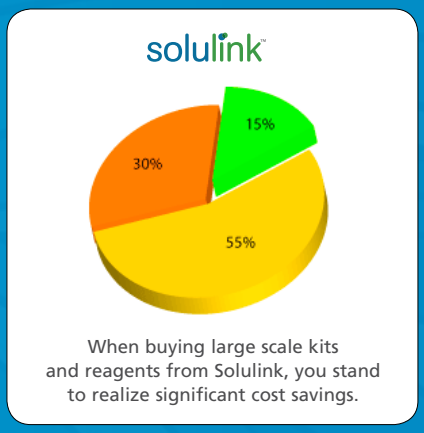
- **Streptavidin Agarose Ultra Performance™**
- **ChromaLink™ Biotin**
- **ChromaLink™ Digoxigenin**
- **HRP-Antibody All-in-One Conjugation Kits**
- **R-PE-Antibody Conjugation Kits**



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Products available in bulk quantities

Product	Size	Cat. No.
Magnetic Beads and Agarose		
NanoLink™ Streptavidin Magnetic Beads 0.8 µm	100 mL at 10 mg/mL	M-1002-1000
MagnaLink™ Streptavidin Magnetic Beads 2.8 µm	100 mL at 10 mg/mL	M-1003-1000
Streptavidin Agarose Ultra Performance™	100 mL	N-1000-100
Biotin		
ChromaLink™ Biotin Labeling Kit, Large Scale	2 mg	B-9007-020K
ChromaLink™ Biotin Labeling Reagent (Water Soluble)	10 mg	B-1007-110
ChromaLink™ Biotin Labeling Reagent (DMF Soluble)	10 mg	B-1001-010
Digoxigenin		
ChromaLink™ Digoxigenin One-Shot Antibody Labeling Kit	Large-scale labels 2 mg	B-9014-020K
Antibody Labeling Kits		
HRP-Antibody All-in-One Conjugation Kit	Kit - conjugates 5 mg Ab (large scale kit)	A-9302-001
Custom Kits		
Custom kits	Custom sizes	Please inquire

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