BioActs Co., Ltd.
9, Cheongneung-daero 595beon-gil, Namdong-gu, Incheon 21666, Korea
Tel: +82-32-818-9100, Fax: +82-32-818-8206
www.bioacts.com • technical@bioacts.com

Technical Information

Fluorescent Streptavidin & Biotin

Overview

Streptavidin is smaller (53 KDa) and has a little lower affinity than avidin yet displays less non-specific binding due to near-neutral pI value and lack of carbohydrates. Biotin, a 244 dalton vitamin found in all living cells, binds with high affinity to avidin and streptavidin. In biotechnology, biotin is conjugated to antibodies, enzymes, reporter to form the tetravalent binding nature of biotin-avidin/streptavidin complex. Biotin-avidin/streptavidin binding has high affinity, which has been utilized in diverse applications such as ELISA, immunohistochemistry, cell surface labeling, affinity purification, FACS, EMSA, etc. The bond formation between biotin and avidin/streptavidin is very rapid, and once formed, is stable at high temperature and in a wide range of pH, organic solvents and denaturing agents. The system is a simple yet elegant and can be incorporated into virtually every immunoassay where an antibody is conjugated with biotin and then detected with avidin or streptavidin conjugated to various commercially available fluorophores and reporters. BioActs offers a variety of fluorescent dye conjugated streptavidin and biotin as effective detecting and analytic probes for diverse applications in biochemical and biological research fields.

- ✓ Conjugated with a wide range of fluorescent dyes
- ✓ Can be utilized in a variety of applications.
- ✓ Bright and photostable fluorescence
- ✓ High water solubility

Table 1. List of fluorescent dye conjugates of Streptavidin

Cat. No.	Fluorescence Label	Ex* (nm)	Em* (nm)
RFP0716	Flamma® 496	496	516
RFP0705	Flamma® 552	550	565
RFP0711	Flamma® 648	648	663
RFP0712	Flamma® 675	675	691
RFP0713	Flamma® 749	749	774
RFP0714	Flamma® 774	774	806

Table 2. List of fluorescent dye conjugates of Biotin

Catalog No.	Fluorescence Label	Ex* (nm)	Em* (nm)	Molar mass (g/mol)
RFP0616	Flamma® 496	496	516	654.64
RFP0605	Flamma® 552	550	565	913.18
RFP0611	Flamma® 648	648	663	927.20
RFP0612	Flamma® 675	675	691	1185.43
RFP0613	Flamma® 749	749	774	951.22
RFP0614	Flamma® 774	774	806	1169.25

Preparation of fluorescence labeled Streptavidin/Biotin solutions

To dissolve dye-labeled compound powder in 0.5–1.0 mL of PBS or other suitable buffer.
The dye-conjugates are stable for at least one years when stored as directed.
For longer storage, divide solutions into aliquots and freeze at <–20°C.
Avoid from light, repeated freezing and thawing of solutions.

Labeling with conjugates of Streptavidin

Streptavidin conjugates are used as secondary detection reagents in many biotechnical applications.
These reagents can also be employed to bind biotin and its derivatives.

- ✓ Direct Streptavidin labeling procedure: Biotin-labeled primary probes such as antibodies, nucleic acids or lectins are conjugated to tissues, cell surfaces or other biomolecules. Excess protein is removed by washing, and detection is facilitated by fluorescent avidin/streptavidin.
- ✓ Indirect Streptavidin labeling procedure: Biotin-labeled antibodies or oligonucleotides are conjugated to tissues, cell surfaces or other biomolecules. This preparation is then treated with unlabeled streptavidin, and excess reagents are removed by washing. Detection is realized by treating of fluorescent biotin derivatives.
  Alternatively, an unlabeled primary antibody is attached to a biomolecular target, which would be bound by the biotin-labeled secondary antibody. The complex is detected by the direct or indirect procedures described above.
- ✓ Centrifuge protein conjugate solutions briefly before using, and only the supernatant should be used for the experiment in order to eliminate any aggregates, thereby reducing the background signal.
  Staining protocols may vary depending on the experimental condition, thus determine appropriate dilution for conjugates empirically.

Custom Labeling Service

Based on accumulated know-how and technologies, BioActs provide a wide range of custom services such as protein fluorescence labeling, organic synthesis, oligonucleotide synthesis upon customers' request. Our reliable technology has acknowledged by our clients from domestic and overseas universities, institutions, in vitro diagnostic and pharmaceutical companies and has enabled to steadily conduct their requirements. In addition, we can introduce fluorescent materials to many other compounds such as organic and inorganic compounds, drugs, hormones, polymer, peptides, proteins, antibodies, etc. We also can provide chemical and optical analytical data, along with cell and animal experiments.

Technical Support

ADDRESS
BioActs CO., LTD. DK Tower 10TH F., 595 beon-gil 9, Cheongneung-daero, Namdong-gu, Incheon, 21666, Korea

PHONE & FAX
Tel: +82-32-818-9100
Fax: +82-32-818-8206

WEBSITE
http://www.bioacts.com/

MAILS
order@bioacts.com (Order Support)
support@bioacts.com (Customer Support)
ivd@bioacts.com (B2B/Bulk Order Support)

SDS (Safety Data Sheets) You can find SDS at www.bioacts.com, the official website of BioActs.
CoA (Certificate of Analysis) provides detailed quality information of each product. To see CoA, check the lot number written on each product's page at www.bioacts.com, when having trouble with check, contact to our technical support team

This product can be used only for research purpose, and it can't be used to treat or diagnose human body or animals.
The product cannot be resold to other regions except for South Korea.
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