

Qty: 2.5 mg/2 ml

Streptavidin
Horseradish Peroxidase
(HRP) Conjugate

Catalog No. 43-4323
Lot No.



HRP-Streptavidin Conjugate

FORM

Streptavidin-HRP is supplied as a liquid 2 ml aliquot (1.25 mg/ml) in a proprietary enzyme conjugate stabilizing buffer containing 0.1% proclin as a preservative. In the preparation of this product, Invitrogen uses highly purified Streptavidin and ultrapure horseradish peroxidase (RZ > 3.0).

BACKGROUND

Streptavidin (MW \approx 66 kDa) binds specifically with biotin (244 kDa). It is derived from the bacterium *Streptomyces avidinii* and bears a remarkable similarity to chicken egg-white avidin both in three-dimensional structure and its ability to bind biotin with extremely high affinity ($K_d=10^{-15}$ M). It is a tetrameric protein capable of binding up to 4 biotin molecules. Unlike avidin, Streptavidin is non-glycosylated and is essentially neutral in charge, whereas avidin (pI \approx 10.5) is basic at neutral pH. Because of this, streptavidin has considerably less non-specific binding resulting in less background. It has replaced avidin as the reagent of choice for most applications where protein interactions may cause background.

USAGE

Invitrogen's Streptavidin-HRP is recommended for use in detection systems utilizing biotinylated antibodies, and other biotinylated molecules. This product is documented for use in a variety of common applications including immunohistochemistry, Western blotting, *In Situ* hybridization, and ELISA. For an excellent, comprehensive review of properties and applications of streptavidin/biotin amplification methods, see Bayer and Wilchek's Avidin-Biotin Technology, Methods in Enzymology, Volume 184, Academic Press (1990).

Working concentrations for specific applications should be determined by the investigator. Appropriate dilutions will be affected by several factors, including primary and secondary antibody affinity, antigen concentration and length of incubations. We recommend the following ranges as starting points.

| | |
|---|---------------------|
| Immunohistochemistry ⁽¹⁻⁶⁾ : | 1:150 to 1:500 |
| Western blot (chromagenic) ⁽¹²⁾ : | 1:1,250 to 1:5,000 |
| Western blot (chemiluminescence) ⁽⁸⁻¹¹⁾ : | 1:2,500 to 1:10,000 |
| ELISA ⁽¹³⁻¹⁶⁾ : | 1:2,500 to 1:5,000 |

Invitrogen has introduced ZyMAX™ Grade Streptavidin-HRP (cat. no. 43-8323) which is an improved version of this product.. For your future purchases, Invitrogen recommends ZyMAX™ Streptavidin-HRP.

PROCEDURES

Invitrogen has general guidelines for ELISA, blotting and other applications available on our Web site at www.invitrogen.com. You may also obtain assistance from our Technical Service department at (800) 955-4494. Another good source of information about general immunoassay procedures is Ed Harlow & David Lane's Antibodies, A Laboratory Manual, Cold Spring Harbor Laboratory (1988). Also see Bayer and Wilchek (referenced above).

STORAGE

The undiluted product is stable when stored at 2-8°C. The stabilizing buffer contains glycerol, allowing storage of the product at -20°C without freezing. Invitrogen does not guarantee performance of this product beyond the expiration date on the bottle.

WARRANTY

Invitrogen products are guaranteed to perform as stated for the recommended applications. This warranty is valid up until the expiration date printed on the bottle.

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PI 434323

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SELECTED INVITROGEN PRODUCT REFERENCES**Immunohistochemistry & Immunocytochemistry**

1. McCullough, K.D. et al, *Cancer Research* 57:1807-1813 (1997).
2. Simsir, A. et al, *J Histotech.* 19(4):335-337 (1997).
3. Tullin, S. et al, *J Immunol.* 158:5554-5559 (1997).
4. Ibanes, J.D. et al., *Vet. Pathol.* 33:412-418 (1996).
5. Muss, H.B. et al, *New Eng. J Medicine* 330:1260-1266 (1994).
6. Xu, M et al, *Cell* 79:729-742 (1994).

In Situ Hybridization

7. McQuid, S. and Allan, G., *J. Histochem. Cytochem.* 40:569-574 (1992)

Western blot (chemiluminescence)

8. Murakami, M. et al, *J Immunol.* 159:439-446 (1997).
9. Solheim, J.C. et al, *J Immunol.* 158:2236-2241 (1997).
10. Tamura, A. et al, *J Immunol.* 155:499-507 (1995).
11. Gettner, S. et al, *J Cell Biol.* 129(4):1127-1141 (1995).

Western blot (chromogenic)

12. Scarpa et al, *Exp. Cell Res.* 229:147-154 (1996).

ELISA

13. Dittel, B. et al, *J Immunol.* 158:4065-4073 (1997).
14. Koo, G.C. et al, *J Immunol.* 158:5120-5128 (1997).
15. Hicks, D.G. et al, *J Histotech.* 20(3):215 (1997).
16. Lindner, M. et al, *J Neurosci.* 14(4):2282-2289 (1994).

RELATED PRODUCTS

| Product | Cat. No. |
|---|---------------------------------|
| Streptavidin-FITC | 43-4311 |
| Streptavidin-AP (ZyMAX™ Grade) | 43-8322 |
| Streptavidin-TRITC | 43-4314 |
| Streptavidin-Cy™3 | 43-4315 |
| Streptavidin-Cy™5 | 43-4316 |
| Streptavidin-Texas Red® | 43-4317 |
| Streptavidin-Phycoerythrin | 15-4301 |
| Streptavidin-Sepharose® 4B | 43-4341 |
| Goat anti-Mouse IgG (H+L)-Biotin (ZyMAX™ Grade) | 81-6540 |
| Goat anti Rabbit IgG (H+L)-Biotin (ZyMAX) | 81-6140 |
| Rabbit anti-Goat IgG (H+L)-Biotin (ZyMAX) | 81-1640 |
| Goat anti-Human IgG (H+L)-Biotin (ZyMAX) | 81-7140 |
| Goat anti-Rat IgG (H+L)-Biotin | 62-9540 |
| Protein A-Biotin | 10-1040 |
| rec-Protein G-Biotin | 10-1240 |
| ABTS Single Solution Chromogen | 00-2024 (ELISA) |
| TMB Single Solution Chromogen | 00-2023 (ELISA), 00-2019 (blot) |
| DAB Liquid Reagent Chromogen Set | 00-2014 (IHC) |
| AEC Single Solution Chromogen | 00-1111 (IHC), 00-2022 (blot) |
| 4-CN Single Solution Chromogen | 00-2025 (blot) |

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