



Montage of 9 X 7 image stacks of rat stomach sections stained for collagen (Cy2, recoloured red), PGP 9.5 pan-neuronal marker (Cy3, recoloured green/aqua), and Ulex europaeus agglutinin type 1 (Cy5, recoloured blue). Images were taken with a confocal microscope from thick tissue sections stained with Cy2-, Cy3-, and Cy5-conjugated secondary antibodies from Jackson ImmunoResearch Laboratories, Inc.

Image contributed by Dr. William R. Kennedy and Dr. Gwen Wendelschafer-Crabb, Department of Neurology, University of Minnesota.

Streptavidin and Conjugates

Streptavidin, a bacterial protein similar to egg-white avidin in its ability to bind biotin, has been used as a replacement for egg-white avidin because of its more favourable chemical properties. It has almost no net charge at neutral pH, does not contain carbohydrate, and exhibits lower non-specific binding. Egg-white avidin has a net positive charge at neutral pH and contains about 7% carbohydrate. Therefore, it may give higher background due to non-specific binding to some cells or other surfaces.

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All conjugates of streptavidin are recommended for use with Biotin-SP (long spacer)-conjugated, affinity-purified, secondary antibodies and Biotin-SP-conjugated ChromPure proteins. Jackson ImmunoResearch's research indicates that this system of covalently conjugated reagents is more stable, gives less background, and is more sensitive than the avidin-biotin-enzyme complex (ABC) method. This has been independently verified by Shi *et al.* (*J. Histochem. Cytochem.* 1988. **36**, 317) and Milde *et al.* (*J. Histochem. Cytochem.* 1989. **37**, 1609). The increased sensitivity may be due to enhanced tissue penetration and less steric hindrance since nominal molecular weights for all components of the conjugated streptavidin system are less than 200,000, which are considerably lower than those of the ABC method.

Jackson ImmunoResearch offer a comprehensive list of fluorophores and enzymes conjugated to streptavidin for use in enzyme immunoassays, immunohistochemistry, flow cytometry, *in situ* hybridization, and immunoblotting procedures. Most streptavidin products are freeze dried in buffer containing stabilizers and preservatives.

Streptavidin	Code Number
Unconjugated (1mg)	016-000-084
Unconjugated (5mg)	016-000-113
Unconjugated (10mg)	016-000-114
Aminomethylcoumarin, AMCA	016-150-084
Cyanine, Cy2	016-220-084
Fluorescein, DTAF	016-010-084
Indocarbocyanine, Cy3	016-160-084
Tetramethyl Rhodamine, TRITC	016-020-084
Rhodamine Red-X, RRX	016-290-084
Texas Red, TR	016-070-084
Indodicarbocyanine, Cy5	016-170-084
Allophycocyanin, APC	016-130-084
R-Phycoerythrin, RPE	016-110-084
Horseradish Peroxidase	016-030-084
Alkaline Phosphatase	016-050-084