

94149 Atto 647N-Streptavidin

Application

Atto 647N belongs to a new generation of fluorescent labels for the red spectral region. The dye is designed for application in the area of life science, e.g. labeling of DNA, RNA or proteins. Characteristic features of the label are strong absorption, excellent fluorescence quantum yield, high photostability, excellent ozone resistance, good solubility, and very little triplet formation. Atto 647N is a cationic dye. After coupling to a substrate the dye carries a net electrical charge of $+1$.

In common with most Atto-labels, absorption and fluorescence are independent of pH in the range of 2 to 11, used in typical applications. As supplied Atto 647N consists of a mixture of two isomers with practically identical absorption and fluorescence properties.

Streptavidin, isolated from *Streptomyces avidinii*, is a tetrameric protein of 4 x 13.2 kDa which binds very tightly to the small molecule biotin. The dissociation constant of the complex is extremely small ($K_d \approx 10^{-15}$ M), ranking among the strongest non-covalent interactions. This has made the streptavidin/biotin system a useful tool in numerous biochemical applications.

Atto streptavidin conjugates may be used as secondary detection reagents in flow cytometry, immunoassays, blot analysis, histochemical applications, etc. The dye conjugates are supplied as solvent-free lyophilized solids. Atto streptavidin conjugates are readily soluble in water.

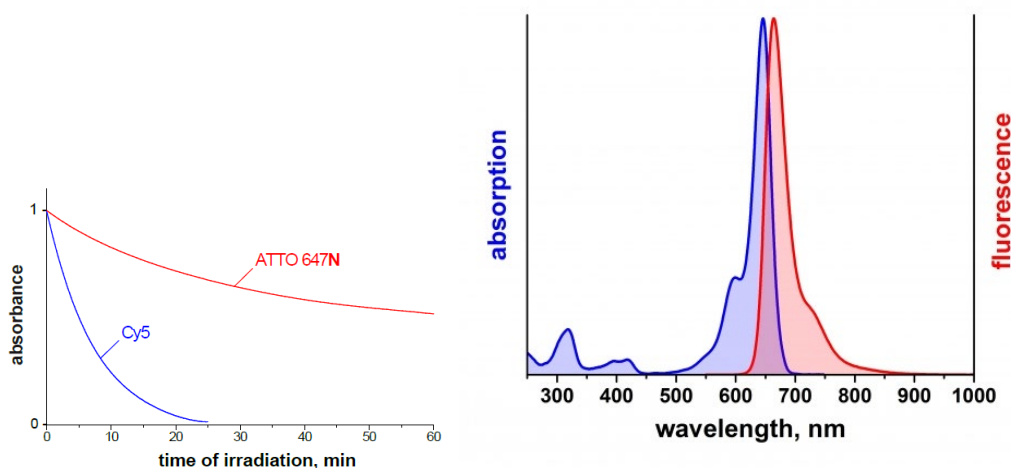
Product Description

Label

λ_{abs}	646 nm
ϵ_{max}	$1.5 \times 10^5 \text{ M}^{-1} \text{ cm}^{-1}$
λ_{fl}	664 nm
η_{fl}	65 %
τ_{fl}	3.5 ns
CF_{260}	0.04
CF_{280}	0.03



Optical data of the carboxy derivative (in aqueous solution)



Storage and handling

Atto-Dyes labeled streptavidines are supplied as lyophilisates and should be stored at $\leq -20^{\circ}\text{C}$, desiccated and protected from light. When stored as indicated, the product is stable for at least two years.

For the preparation of stock solutions allow vial to equilibrate to room temperature before opening. Dissolve the Atto-streptavidin conjugate in distilled water to a concentration of 1 mg/ml. For long-term storage of such solutions one should add sodium azide to a concentration of 5 mM. Protected from light and stored at $2 - 6^{\circ}\text{C}$, solutions are stable for up to six months. For longer storage you may divide the solution into aliquots and freeze at -20°C . However, one should avoid repeated freezing-and-thawing cycles.

Storage: Store at -20°C and protected from light.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

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