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PRO-0001 Avidin

Description

Avidin is a tetrameric biotin-binding protein produced in the oviducts of birds, reptiles and amphibians and deposited in the whites of their eggs. In chicken egg white, avidin makes up approximately 0.05% of total protein (approximately 1800 µg per egg). The tetrameric protein contains four identical subunits (homotetramer), each of which can bind to biotin (Vitamin B7, vitamin H) with a high degree of affinity and specificity. The dissociation constant of the avidin-biotin complex is measured to be $KD \approx 10^{-15}$ M, making it one of the strongest known non-covalent bonds.[1]

In its tetrameric form, avidin is estimated to be 60–69 kDa in size.[2] 10% of the molecular weight is contributed by carbohydrate, composed of four to five mannose and three N-acetylglucosamine residues.[3] The carbohydrate moieties of avidin contain at least three unique oligosaccharide structural types that are similar in structure and composition.[4]

Product Type

Avidin from egg white

Applications

Research in the 1970s helped establish the avidin-biotin system as a powerful tool in biological sciences. Aware of the strength and specificity of the avidin-biotin complex, researchers began to exploit avidin and streptavidin as probes and affinity matrices in numerous research projects.[5][6][7][8] Soon after, researchers Bayer and Wilchek developed new methods and reagents to biotinylate antibodies and other biomolecules,[9][10] allowing the transfer of the avidin-biotin system to a range of biotechnological applications. Today, avidin is used in a variety of applications ranging from research and diagnostics to medical devices and pharmaceuticals.

Avidin's affinity for biotin is exploited in wide-ranging biochemical assays, including western blot, ELISA, ELISPOT and pull-down assays. In some cases the use of biotinylated antibodies has allowed the replacement of radioiodine labelled antibodies in radioimmunoassay systems, to give an assay system which is not radioactive.

Avidin immobilized onto solid supports is also used as purification media to capture biotin-labelled protein or nucleic acid molecules.

Tested by

SDS Page, HABA assay for biotin binding capacity, Endotoxin, total microbial count

Purity

Purity: > 95% as determined by RP-HPLC

Form

Liquid

Storage Buffer

Phosphate buffered Saline pH 7 and Polisorbate80

Storage instructions

Shipped at +4°C. The protein is stable for 36 months if stored at +4°C.
NOTE: Avoid repeated freeze/thaw cycles.

References

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