SANTA CRUZ BIOTECHNOLOGY, INC.

Avidin (A3G7): sc-51760

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Avidin is a tetrameric glycoprotein found in egg white that binds Biotin. Avidin has a very strong affinity for Biotin, with a Kd (dissociation constant) of approximately 10-15 M-1[1], the highest known between any ligand and a protein. Avidin binds Biotin stoichiometrically, attaching one molecule of Biotin per subunit, or four molecules of Biotin per tetramer. Avidin-induced Biotin-deficient meals, especially those rich in egg white, make it impossible for Biotin to be absorbed in the small intestine. Avidin is too large to be absorbed into the intestines, and when bound tightly to Biotin, the Avidin-Biotin complex is too large to pass into the intestine, therefore preventing absorption of Biotin in the gastrointestinal tract. Avidin is highly soluble in water or salt solution at physiological pH.

REFERENCES

1. Green, N.M. 1966. The molecular weight of Avidin. Biochem. J. 92: 16C-17C.
2. Meslar, H.W., Camper, S.A. and White, H.B. 1978. Biotin-binding protein from egg yolk. A protein distinct from egg white Avidin. J. Biol. Chem. 253: 6979-6982.
3. Bench, B.J., Johnson, R., Hamilton, C., Gooch, J. and Wright, J.R. 2003. Avidins that might be developed for boron neutron-capture therapy. J. Colloid Interface Sci. 270: 315-320.
4. Hytönen, V.P., Määttä, J.A., Kidron, H., Halling, K.K., Hörhä, J., Kulomaa, T., Nyholm, T.K., Johnson, M.S., Salminen, T.A., Kulomaa, M.S. and Airenne, T.T. 2005. Avidin related protein 2 shows unique structural and functional features among the Avidin protein family. BMC Biotechnol. 5: 28.
5. Nordlund, H.R., Hytönen, V.P., Hörhä, J., Määttä, J.A., White, D.J., Halling, K., Porkka, E.J., Slotte, J.P., Laitinen, O.H. and Kulomaa, M.S. 2005. Tetravalent single-chain Avidin: from subunits to protein domains via circularly permuted avidins. Biochem. J. 392: 485-491.
6. Conners, R., Hooley, E., Clarke, A.R., Thomas, S. and Brady, R.L. 2006. Recogniti Avidin. J. Mol. Biol. 357: 263-274.
7. Hama, Y., Urano, Y., Koyama, Y., Choyke, P.L. and Kobayashi, H. 2006. Targeted optical imaging of cancer cells using lectin-binding BODIPY conjugated Avidin. Biochem. Biophys. Res. Commun. 348: 807-813.
8. Hidalgo-Fernández, P., Ayet, E., Canal, I. and Farrera, J.A. 2006. Avidin and streptavidin ligands based on the glycoluril bicyclic system. Org. Biomol. Chem. 4: 3147-3154.
9. Hytönen, V.P., Hörhä, J., Airenne, T.T., Niskanen, E.A., Helttunen, K.J., Johnson, M.S., Salminen, T.A., Kulomaa, M.S. and Nordlund, H.R. 2006. Controlling quaternary crystal structure of dual chain Avidin. J. Mol. Biol. 359: 1352-1363.

SOURCE

Avidin (A3G7) is a mouse monoclonal antibody raised against egg white Avidin.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Avidin (A3G7) is recommended for detection of Avidin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:10-1:100) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); permits the formation of antibody-Avidin complexes, thus enhancing the sensitivity of the detection system.

Molecular Weight of Avidin: 19 kDa.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.