ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

DNP (2-4-Dinitrophenol)-BSA Protein Biotin Conjugate

Cat. # DNP35-BTN-10 DNP-BSA protein Biotin Conjugate (antigen grade) **SIZE**: **5 mg**

Asthma is a chronic lung disease characterized by airway hyper-responsiveness (AHR) to allergens, airway edema, and increased mucus secretion. Increased levels of circulating IgE and IgG1 antibody and a propensity to allergic responses, atopy, are associated with the development of asthma. Animal models of AHR, where control of the timing of exposure to the initiating antigen, the use of a defined allergen trigger, and genetic manipulation are likely to enhance the understanding of AHR. Dinitrophenol (DNP) has long been employed as a model immunogen as a single antigen to reduce the complexity of modeling AHR.

One of the primary aspects of the immune response is the interaction of antigens with lymphocytes to induce the formation of antibodies, that in turn makes the antigen harmless. Much of our current understanding of the antibody response to antigens has been derived by using the antibody-hapten model. One known model uses the dinitrophenyl (DNP) group. Immunization of many mammalian species with DNP-protein conjugates results in production of antibodies specific for DNP and the amino acid side chains to which it is attached.

DNP conjugates (DNP-KLH or DNP-BSA) useful for the production of antibodies specific for DNP and hemocyanin or BSA. DNP-immunization produced a significant variation in the amount and antibody class (IgGs, IgA, IgE, IgM) among strains, and under various experimental conditions. DNP preparations (purity and supplier), doses (amount per injection), routes (intramuscular, intravenous, aerosol, liposome entrapped, polymerized etc), frequency of exposure (single injections, multiple etc) may induce a defined class of antibody and its level may vary as well. DNP-induced antibody production has been used to assess the immune status of normal and immune-compromised animals.

SourceofAntigenandAntibodies

Antigen	DNP-BSA (cat # DNP35-N-10); contains approx. 40 DNP/molecule of BSA. Suitable for use as coating antigen for ELISA or as model antigen.

DNP-KLH protein conjugate (Cat # DNP25-N-10) is also available to test antibody by ELISA or Western. Anti-BSA antibodies produced in mouse, goat and sheep are also available.

Cat# DNP35-BTN-10, Biotin-conjugate

DNP-BSA conjugate was coupled to Biotin using Biotinamidocaproate N-Hydroxysuccinimide Ester (BAC**)** at F/P ratio ~10-20:1. The antibody is supplied in PBS, pH 7.4, 0.2% BSA and 0.05% azide in either **lyophilized** (0.1 mg) or **liquid** form (or see lot sp. conc on the vial). Reconstitute powder in PBS to prepare 1 mg/ml solution. Store at -20oC in suitable aliquots. Stability is ~6-12 months. Do not freeze and thaw.

Suggested conjugate dilutions are 1:5,000-1:30,000 ELISA, 1:2K-1:10K for western.

Form & Storage of Antibodies/Peptide Control

Amber Solid powder. Reconstitute in distilled water or buffer at a desired concentration.

Storage

Short-term: unopened, undiluted liquid vials at -20^{O}C and powder at 4^{o}C or -20^{o}C..

Long-term: at –20^{0}C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20^{o}C or below.
Shipping: 4^{o}C for solutions and room temp for powder

Suggested Applications

Model Antigen or Control Antigen

Antibodies are produced to a foreign antigen (protein, peptide, small molecule, bacteria or viruses etc). Most large proteins are able to produce antibodies in a foreign host but small molecules (Haptens) such as small chemicals or drugs or antibiotics or peptides must be coupled to a large carrier protein (BSA, Ovalbumin, thyroglobulin, toxoids etc) to make antibodies. The presence of antibody enhancers (adjuvants) often boost the antibody response by attracting the antibody producing cells. Traditionally, oil-based adjuvants, with or without killed bacterium (e.g., complete and incomplete Freund's), are used for animal studies. Recently, non-Freund's type adjuvants such as Titermax have been used to avoid the usage of Freund's adjuvant or use in vaccines where traditional adjuvant cannot be used.

Model antigens have typically been used to study the immune status of immune compromised animals or to compare the effect of added substances (adjuvant). A variety of model antigens can be used: Proteins (medium size such ovalbumin (45 kda) or BSA (65 kda), Thyroglobulin & KLH (>100 Kda-million Kda), Peptides (10-100 amino acid), haptens (DNP), bacterial protein (HbSAg), Toxoid (Cholera or Diphtheria), Viral recombinant proteins (HIV or H1N1 or H5N1, influenza) are used to study the immune responses. The advantage of using these model antigens is that they are available in purified form and there antibodies and ELISA kits are also available.

Model antigen doses, routes of immunization, frequency of injection, immunization period, animal selection, and the use of adjuvant must be selected based upon experimental protocol.

**All product are for In vitro research use only.*

Related material available from ADI

DNP-KLH and DNP-BSA proteins conjugates.
Anti-DNP antibodies quantitation ELISA kits for mouse, rabbit, goat etc.

Anti-KLH antibodies quantitation ELISA kits for mouse, rabbit, goat etc.

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