

Product Specification Sheet

Diphtheria Toxoid Protein and Antibodies

Cat. DTOX12-S	Goat Anti-Diphtheria Toxoid/Toxin IgG, unlabeled	Size: □ 100 ul
Cat. DTOX12-B	Goat Anti-Diphtheria Toxoid/Toxin IgG-Biotin Conjugate	Size: □ 0.5 ml
Cat. DTOX12-F	Goat Anti-Diphtheria Toxoid/Toxin IgG-FITC Conjugate	Size: □ 0.5 ml
Cat. DTOX12-HRP	Goat Anti-Diphtheria Toxoid/Toxin IgG-HRP Conjugate	Size: □ 0.5 ml

Diphtheria is a localized infection of mucous membranes or skin caused by toxigenic strains of CORYNEBACTERIUM DIPHTHERIAE. It is characterized by the presence of a pseudomembrane at the site of infection. DIPHTHERIA TOXIN, produced by C. diphtheriae, can cause myocarditis, polyneuritis, and other systemic toxic effects. Diphtheria toxin is an exotoxin secreted by Corynebacterium diphtheriae, the pathogen bacterium that causes diphtheria. Diphtheria toxin is a single polypeptide chain of 535 amino acids (~63 kda) consisting of two subunits linked by disulfide bridges. An ADP-ribosylating polypeptide produced by CORYNEBACTERIUM DIPHTHERIAE that causes the signs and symptoms of DIPHTHERIA. It can be broken into two unequal domains: the smaller (24 kda), catalytic A domain is the lethal moiety and contains MONO(ADP-RIBOSE) TRANSFERASES which transfers ADP RIBOSE to PEPTIDE ELONGATION FACTOR 2 thereby inhibiting protein synthesis; and the larger B domain (39 kda) that is needed for entry into cells. Diphtheria toxin is extraordinarily potent. A massive release of toxin into the body will likely cause lethal necrosis of the heart and liver. Diphtheria Toxoid is formaldehyde-inactivated toxin of Corynebacterium diphtheriae. It is generally used in mixtures with TETANUS TOXOID and PERTUSSIS VACCINE; (DTP); or with tetanus toxoid alone (DT for pediatric use and Td, which contains 5- to 10-fold less diphtheria toxoid, for other use). Mutant forms of diphtheria toxin (DT), cross-reactive material 197 (CRM 197) is a non-toxic DT mutant containing a lesion in the A chain blocking ADP-ribosylation. CRM has the advantage of being a well-defined protein in contrast to formaldehyde treated toxin (toxoid) which is non-specifically cross linked and subject to rearrangement. CRM functions as a carrier for polysaccharides and haptens making them immunogenic. Toxoid refers to the inactivated version of the active toxin. It is typically produced by formaldehyde inactivation of the active protein.

Source of Antigen and Antibodies

Antigen	purified diphtheria toxoid (#DTOX15-N-500)
Ab Host/type	Goat, Polyclonal antiserum, (Cat # DTOX12-S) or conjugated to Biotin, FITC, and HRP
2-Ab	Rabbit Anti-goat IgG-HRP conjugate Cat # 30220 (AP, biotin, FITC conjugates also available)
-ve	# 20011-1, Goat (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control

Form & Storage

100 ul solution lyophilized powder
Buffer: PBS pH 7.4 and 0.05% azide
Reconstitute powder in 100 ul water

Stability: 6-12 months at -20oC or below.

Cat# DTOX12-HRP, HRP-conjugate

Purified antibody was coupled to HRP (RZ>3.0) using periodate method. The molar enzyme to protein (E/P) ratio = 4.0. The antibody is supplied in stabilizing buffer, 0.1% prolcin-300 as preservative in either **lyophilized** (0.5 ml) or **liquid** form (0.5-0.5 mg/ml). Reconstitute powder in PBS in 0.5 ml. Store at 4oC in suitable aliquots. Stability is ~6-12 months. Do not freeze and thaw.

Suggested conjugate dilutions are 1:1,000-1:10,000 ELISA, 1:1K-1:5K for western, and 1:200-1:1000 (IHC).

Cat# DTOX12-F, FITC-conjugate

Purified antibody was coupled to FITC at F/P ratio ~3:7. The antibody is supplied in PBS, pH 7.4, 0.2% BSA and 0.05% azide in either **lyophilized** (0.5 ml) or **liquid** form (0.5 mg/0.5 ml). Reconstitute powder in PBS in 0.5 ml 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 1:200-1:2000 for immunofluorescence.

Absorption Wavelength: 495 nm
Emission Wavelength: 528 nm

Cat# DTOX12-B, Biotin-conjugate

Purified antibody 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** (0.5 ml) or **liquid** form (0.5 ml). Reconstitute powder in PBS in 0.1 ml 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.

General References: Honjo J (1968) JBC 243, 3553; Gill Dm (1969) J. Exp. Med. 129, 1-21; Bowman JB (1970) J. Exp. Med. 132, 1138; Uchida T (1972) Science 175, 901-903; Holmes RK (2000) J. Infect. Dis. 181, S156; Robbins JB (1990) J. Infect. dis. 161, 821-832;

This product is for in vitro research use only.

Related material available from ADI

Diphtheria Toxoid, Toxin (whole), subunits A and B

Antibodies to subunits A and B

ELISA Kits for the detection of anti-Diphtheria Toxoid IgG in rabbit, mouse, and human.

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