

## Anti-Diphtheria toxoid

### Mouse monoclonal antibody

Subclass: IgG1/k

PRODUCT NO.

**HYB 123-05**

PRESENTATION

Preparation: Protein-A purified  
 Content: Available in 200 µL and 1 mL volumes, 1 mg/mL  
 Solvent: 0.01 M phosphate buffer, pH 7.4, containing 0.5 M NaCl and 15 mM sodium azide  
 Storage: In the dark at 4-8°C

ANTIGEN

*Corynebacterium diphtheriae* is a Gram-positive, non-motile bacterium that can cause serious illness in unvaccinated humans. *C. diphtheriae* infects the epithelial cells of the upper respiratory tract from where they secrete a potent toxin that is absorbed and disseminated through lymph channels and blood to the susceptible tissues of the body. The toxin is a single protein chain of 62 kDa which is "nicked" at proteolytic processing sites to produce an A chain of 21 kDa and a B chain of 40 kDa, held together by a disulfide bridge. The A-chain carries the ADP-ribosylation enzymatic activity responsible for the toxic action (1).

IMMUNOGEN

Diphtheria toxoid prepared from toxin purified from *C. diphtheriae* subsp. *intermedius* Park-Williams no. 8 by formaldehyde inactivation (2), and adsorbed to aluminum hydroxide gel.

SPECIFICITY

HYB 123-05 reacts with diphtheria toxoid (3) and also neutralizes diphtheria toxin as determined in a VERO cell assay.

EPI TOPE SPECIFICITY

Not determined

REACTIVITY

HYB 123-05 reacts strongly with diphtheria toxoid. HYB 123-05 detects diphtheria toxoid in sandwich ELISA in combination with a polyclonal antibody against the toxoid as capture antibody (3). Strong reaction is also seen in ELISA with diphtheria toxoid coated directly onto the microtiter well.

An antibody pair consisting of HYB 123-09 and HYB 123-05 can be used in a sandwich ELISA when using HYB 123-09 as a coat and biotinylated HYB 123-05 a detection antibody.

CULTURE MEDIUM

RPMI 1640 with 10% fetal calf serum

FUSION PARTNER

X63-Ag8.653.

IMMUNIZATION

Female CF1xBalb/c F1 hybrid mice immunized by intraperitoneal injection

APPLICATION

Method	Usability	Dilution guideline	References
ELISA	Yes	1/35,000	
Immunoblotting	Not determined		
Immunohistochemistry	Not determined		

The dilution guideline for ELISA is based on use as detection antibody for antigen coated at 2 µg/mL. For use as a detection antibody in sandwich ELISA the dilution will typically be lower. Users should determine the optimal dilutions for their own purposes.

REFERENCES

- Pappenheimer AM Jr (1977) Diphtheria toxin. *Ann Rev Biochem* 46:69-94.
- World Health Organization (1977) Manual for the production and control of vaccines. Diphtheria toxoid. BLG/UNDP/77.1. World Health Organization, Geneva.
- Nielsen PB, Koch C, Friis H, Heron I, Prag J, Schmidt J (1987) Double-antibody sandwich enzyme-linked immunosorbent assay for rapid detection of toxin-producing *Corynebacterium diphtheriae*. *J Clin Microbiol* 25:1280-1284.

### CONDITIONS

All products are supplied on the understanding that they are for in vitro use only. The information and product are offered without guarantee as the ultimate conditions of use are beyond our control. The animals from which this product was derived have not been exposed to or inoculated with any livestock or poultry disease agents exotic to the United States or Western Europe, and did not originate from facilities where work with exotic disease agents affecting livestock or avian species is carried out.