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Product Information

Anti-Staphylococcal Enterotoxin A-Peroxidase antibody produced in rabbit
IgG fraction of antiserum

Product Number **SAB4200830**

Product Description

Anti-Staphylococcal Enterotoxin A antibody is developed in rabbits using purified Staphylococcal Enterotoxin A from *Staphylococcus aureus* as immunogen. Whole antiserum is purified using protein A immobilized on agarose to provide the IgG fraction of the antiserum and is conjugated to horseradish peroxidase.

Anti- Staphylococcal Enterotoxin A-peroxidase antibody specifically recognizes Staphylococcal Enterotoxin A (SEA) and has no cross reactivity with Staphylococcal Enterotoxin B (SEB), Cholera Toxin, or Pseudomonas Exotoxin A. The antibody may be used in various immunochemical techniques including ELISA. The product has **not** been tested for its neutralization potency against active Staphylococcal Enterotoxin A.

Staphylococcus aureus is a Gram-positive bacterium, that causes diseases in the human population including food poisoning and toxic shock syndrome.[1] *S. aureus* expresses several secreted virulence factors, such as various enzymes, cytotoxins, exotoxins, and exfoliative toxins.[1] Exotoxins include more than 20 serologically classified staphylococcal enterotoxins (SEs), the best characterized are SEs A, B through V, and toxic shock syndrome toxin-1 (TSST-1). These enterotoxins are similar in activity, sequence, structure, and molecular mass (25–30 kDa).[1-3]

SEA along with SEB are known as superantigens due to their ability to bind class II MHC molecules on antigen presenting cells. They stimulate extensive T-cells activation followed by massive cytokine release leading to an acute toxic shock.[1-4]

SE proteins have a significant resistance to heat and acid, and are also resistant to gastrointestinal proteases including pepsin, trypsin, rennin, and papain. Thus, killing the *S. aureus* bacteria may not be sufficient to eliminate the risk of these superantigens causing food poisoning.[1]

As described by various researchers, detection of SEA contamination is a major challenge in the food industry, including milk and cooked food products.[1, 3, 5-7]

SEA high affinity to MHC class II receptors on antigen presenting cells and tissues, followed by the excessive systemic immune activation, was applied in attempts to use bispecific antibodies (BsAbs) genetically fused to SEA as a T-cell stimulator. The SEA activation resulted in a non-specific activation of MHC class II-positive tissues which causes side-effects. Mutated SEA, D227A, was developed to reduce the adverse effects for directing activated T-cells toward tumor cells.[8-9]

Reagent

Supplied as a lyophilized powder.

Preparation Instructions

Reconstitute the contents of the vial with 0.1 ml of distilled water to a final antibody concentration of ~4 mg/ml. After reconstitution, the solution contains 2.5% trehalose and 0.01% thimerosal in 0.01 M sodium phosphate buffered saline.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store the lyophilized product at 2–8 °C. For extended storage after reconstitution, keep at –20 °C in working aliquots. Avoid repeated freeze-thaw cycles. For continuous use after reconstitution, keep at 2–8 °C for up to 1 month. Solutions at working dilution should be discarded if not used within 12 hours.

Product Profile

Direct ELISA: a working dilution of 1:2,000-1:4,000 is recommended using 1 μg/ml Staphylococcal Enterotoxin A for coating.

Note: In order to obtain the best results in different techniques and preparations, it is recommended to determine the optimal working concentration by titration.

References

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