

Technical Bulletin

Anti-Enterococcus faecalis antibody produced in rabbit

IgG fraction of antiserum

SAB4200868

Product Description

Anti-Enterococcus faecalis antibody is developed in rabbits using inactivated *E. faecalis* bacteria (ATCC 12984). Whole antiserum is purified using protein A immobilized on agarose to provide the IgG fraction of antiserum.

Anti-Enterococcus faecalis antibody recognizes *E. faecalis* lysate and whole dead bacteria, the antibody may be used in various immunochemical techniques including immunoblotting. Detection of the *E. faecalis* bands by immunoblotting is specifically inhibited by the immunogen.

Enterococcus faecalis is a gram positive, non-motile, facultative anaerobic, coci-shaped bacterium.^{1,2} It is a commensal bacterium of the human gut and a major opportunistic pathogen in susceptible hosts.¹ *E. faecalis* is the third most common pathogen associated with hospital-acquired infections.² *E. faecalis* inhabits the gut in 80% of healthy adults and is also a part of the oral cavity normal flora in 20% of the adult population. In addition, *E. faecalis* was also identified in the human urinary tract.¹

E. faecalis contributes to the host in several ways, such as, competing with pathogen bacteria and preventing them from reaching the gut epithelia, prevention of intestinal epithelial barrier leakage and provision of protection from pathogens to the young infant through breast milk consumption.^{1,3-5}

Moreover, *E. faecalis* also has many effects on the immune system that are beneficial to the host, such as, promoting the secretion of anti-inflammatory cytokines IL-10 and TGF- β and induction of IgA production.^{1,6,7} However, when the homeostasis in the gut and mucus barrier is disrupted, especially in susceptible individuals such as in inflammatory bowel diseases (IBD) patients, or upon antibiotic administration, *E. faecalis* might become an opportunistic pathogen. In such case, the bacteria population overgrows and translocates through the mucus barrier to reach the epithelial cells of the gut where it can enter the bloodstream and the lymphatic system and cause severe inflammation.^{1,8,9}

The transition of *E. faecalis* through the gut barrier could also be active. *E. faecalis* secretes gelatinase (GelE), a metalloprotease that can directly compromise epithelial tight junctions and degrade collagen in the intestinal tissue, facilitating translocation.^{10,11} Moreover, *E. faecalis* expresses Aggregation substance (AS), adhesin that mediates the adherence of the bacteria to the epithelia and promotes the internalization by enterocytes and/or phagocytosis by macrophages, where *E. faecalis* can survive for extended periods of time.¹² After transition from the gut to the bloodstream or tissues, *E. faecalis* alters gene expression to ensure persistence and survival, and as result promotes its virulence.¹

The major challenge in *E. faecalis* treatment is biofilm formation that is achieved with factors such as, Ebp pili that mediate adhesion, and quorum sensing molecules that enable communication between the bacteria.² The biofilm also shields the bacteria from the immune response and antibiotics.^{1,2} *E. faecalis* strains, mainly from clinical infection sources, have acquired over the years resistance to various antibiotics, such as, tetracycline, chloramphenicol gentamicin, erythromycin, ampicillin and vancomycin.^{13,14}

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline pH 7.4, containing 15 mM sodium azide as a preservative.

Precautions and Disclaimer

Unless otherwise stated in our catalog our products are intended for research use only and are not to be used for any other purpose, which includes but is not limited to, unauthorized commercial uses, in vitro diagnostic uses, ex vivo or in vivo therapeutic uses or any type of consumption or application to humans or animals.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting

A working dilution of 1:500-1:1000 is recommended using *Enterococcus faecalis* bacteria lysate.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

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