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Product Information

Anti-o-spanin antibody produced in rabbit
Affinity isolated antibody, buffered aqueous solution

Product Number **SAB4200825**

Product Description

Anti-o-spanin antibody is developed in rabbit using as immunogen a synthetic peptide corresponding to the internal region of *Escherichia coli* (K12) o-spanin (geneID: 1450242), conjugated to KLH. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-o-spanin antibody specifically recognizes the Outer membrane lipoprotein subunit o-spanin from *E. coli* and *Shigella flexneri,* and does not cross react with *Proteus mirabilis*. The antibody may be used in various immunochemical techniques including immunoblotting (predicted ~6.5 kDa, observed ~20 kDa due to oligomerization). Detection of the o-spanin band by immunoblotting is specifically inhibited by the immunizing peptide.

E. coli o-spanin, also known as Outer membrane lipoprotein Rz1 from lambdoid prophage DLP12, RzoD, or RzoR, originates from the defective coliphage lambda DLP12 genome carried by *E. coli* and present in nearly all lambdoid phages and many additional bacteriophages.[1-2] The DLP12 cassette in *E. coli* contains four lysis proteins ORFs; a holin (S) through which the endolysin (R) and spanin (Rz/Rz[1]) escape into the periplasmic space. Two spanin cell-lysis proteins, o-spanin an outer membrane lipoprotein and i-spanin (rzpD) an integral inner membrane protein are homologues of the lambda phage RZ1 and RZ genes respectively, the Rz1 gene is uniquely located within the +1 reading frame of Rz.[1-6]

Spanins are conserved among lambdoid phages and comprise the final step of lysis in lambda phage infections of *E. coli*. These proteins form a heterotetramer complex composed of two homodimers linked by homotypic intermolecular disulfide bonds, which spans the periplasm and bridges the cell envelope thus causing fusion of the inner and outer membranes and disruption of the bacterium membrane.[1-7]

The DLP12 lysis genes play an important, yet to be identified role in the bacterial cell wall maintenance and biofilm formation. This was shown using mutated strains lacking *essD*, *ybcS,* and *rzpD/rzoD* that were unable to form biofilms and had significant lower aggregation as compared with wild-type. These findings suggest that defective prophage genes affect host cell physiology, contribute to host fitness and survival, biofilm dispersion, and enhance biofilm traits such as antibiotic resistance, attachment, phage tolerance, and metabolite recycling.[2,8]

Reagent

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

Antibody Concentration: ~1.0 mg/mL

Precautions and Disclaimer

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

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 concentration of 1:500-1:1000 is recommended using *E. coli* lysate.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration test.

References

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