

STAADIUM™ PhosphoZide, Patent pending

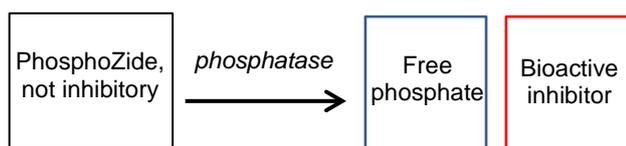
Cat. No. Z-4004_P00

M.W. 313.3 g/mol

Introduction

STAADIUM™ PhosphoZide is an enzyme-responsive inhibition substrate acting on phosphatase positive bacteria.

The non-inhibitory compound containing a phosphoryl enzyme labile group is cleaved by acid and alkaline phosphatases, leading to the release of a bioactive compound.



The growth of phosphatase positive microorganism is inhibited, while phosphatase-negative microorganisms are not affected.

STAADIUM™ PhosphoZide can be used as enzyme-specific selective supplement in agar plates and as an enrichment agent in broth culture.

Application example 1

Nutrient Agar (5 g/L peptone, 2 g/L yeast extract, 1 g/L meat extract, 5 g/L sodium chloride, 15 g/L agar, pH 7.4) was autoclaved and allowed to cool to 50°C, then 0.5 mM PhosphoZide was added from a concentrated stock solution. A control plate was prepared similarly, but did not contain PhosphoZide.

Freshly grown *Staphylococcus aureus* ATCC 13124 were serially diluted in sterile saline and spotted on agar plates with and without inhibition substrate. Plates were incubated at 37°C for 24 h.

Control:
no inhibitor added



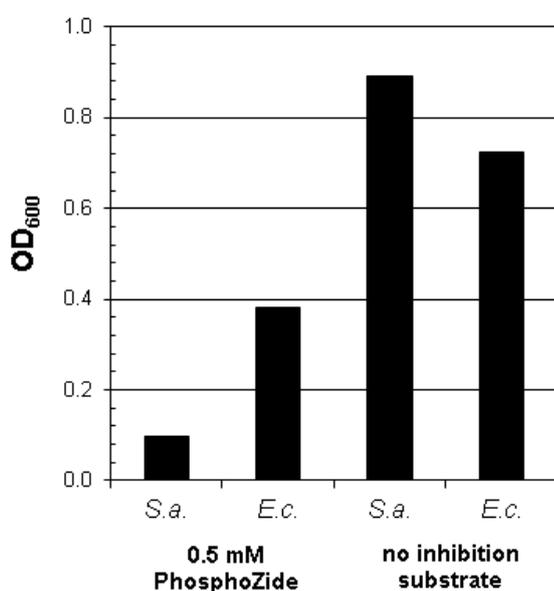
With inhibition substrate:
0.5 mM STAADIUM™ PhosphoZide



Application example 2

Freshly grown *Staphylococcus aureus* ATCC 13124 and *Escherichia coli* ATCC 25922 were inoculated in Nutrient broth (5 g/L peptone, 2 g/L yeast extract, 1 g/L meat extract, 5 g/L sodium chloride, pH 7.4) with and without 0.5 mM PhosphoZide. Tube cultures were incubated at 37°C and 150 rpm.

Growth after 24 h:



Technical information

Instructions for use:

Add PhosphoZide as concentrated, filter-sterilized stock solution after autoclaving

Stock Solution:

Prepare a 25 mM (7.83 mg/mL) stock solution in a 1:1 mixture of dimethyl sulfoxide and water (50% dimethyl sulfoxide)

Recommended working concentration:

0.5 - 1 mM, 0.16 - 0.31 g/L (20 to 40 mL of 25 mM stock solution per L)

Note:

When STAADIUM™ PhosphoZide is used as an enrichment agent in broth culture, addition of phosphate buffer at 25-100 mM and FeCl₃ 6 H₂O at 0.3-1 mM is recommended in order to protect phosphatase-negative organisms from released inhibitor.

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