

β lactamase (8A5.A10): sc-66062

BACKGROUND

β-lactam antibiotics constitute a broad class of antibiotics as well as the most widely used group of antibiotics available. β lactamases represent a heterogenous group of enzymes produced by many types of bacteria. This enzyme makes the bacteria resistant to β lactam antibiotics, including penicillins and cephalosporins, which inhibit the synthesis of the peptidoglycan layer of bacterial cell walls. β lactamase catalyzes the opening and hydrolysis of the β lactam ring in the antibiotic's structure, thus deactivating the antibiotic's antibacterial properties. Four classes (A-D) of β lactamase are classified according to sequence, substrate specificity, and kinetic behavior. Classes A, C, and D work via a serine based mechanism, and class B (also referred to as metallo-β lactamase) require zinc.

REFERENCES

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SOURCE

β lactamase (8A5.A10) is a mouse monoclonal antibody raised against 5th-His-tagged TEM-1 β lactamase.

PRODUCT

Each vial contains 100 μg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

β lactamase (8A5.A10) is recommended for detection of TEM-type β lactamases of gram negative bacteria origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of β lactamase: 40 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

SELECT PRODUCT CITATIONS

- Reeves, A.Z., Spears, W.E., Du, J., Tan, K.Y., Wagers, A.J. and Lesser, C.F. 2015. Engineering *Escherichia coli* into a protein delivery system for mammalian cells. *ACS Synth. Biol.* 4: 644-654.
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- Cumming, A.J., Khananisho, D., Harris, R., Bayer, C.N., Nørholm, M.H.H., Jamshidi, S., Ilag, L.L. and Daley, D.O. 2022. Antibiotic-efficient genetic cassette for the TEM-1 β-lactamase that improves plasmid performance. *ACS Synth. Biol.* E-published.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.