



Okadaic Acid (7E1): sc-101359

BACKGROUND

Bivalves represent a class of aquatic dwelling mollusks that have two-part shells and include clams, scallops, oysters and mussels. Okadaic Acid (OA) is a fat soluble toxin that can accumulate in bivalves and, if ingested, may cause diarrhetic shellfish poisoning (DSP), an affliction that is characterized by incapacitating diarrhea, nausea, vomiting, abdominal cramps and chills. Specifically, Okadaic Acid functions as a phosphatase inhibitor that prevents intestinal cellular phosphorylation, thus rendering cells extremely permeable to water and causing severe dehydration. Okadaic Acid may also increase the expression of nerve growth factor (NGF), thereby protecting cells from apoptosis and promoting abnormal cell growth, possibly leading to oncogenesis.

REFERENCES

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4. Souid-Mensi, G., Moukha, S., Mobio, T.A., Maaroufi, K. and Creppy, E.E. 2008. The cytotoxicity and genotoxicity of Okadaic Acid are cell-line dependent. *Toxicol.* 51: 1338-1344.
5. Kim, Y.S., Ahn, K.H., Kim, S.Y. and Jeong, J.W. 2009. Okadaic Acid promotes angiogenesis via activation of hypoxia-inducible factor-1. *Cancer Lett.* 276: 102-108.
6. Atkinson, T., Whitfield, J. and Chakravarthy, B. 2009. The phosphatase inhibitor, Okadaic Acid, strongly protects primary rat cortical neurons from lethal oxygen-glucose deprivation. *Biochem. Biophys. Res. Commun.* 378: 394-398.
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8. Ahn, K.H., Kim, Y.S., Kim, S.Y., Huh, Y., Park, C. and Jeong, J.W. 2009. Okadaic Acid protects human neuroblastoma SH-SY5Y cells from 1-methyl-4-phenylpyridinium ion-induced apoptosis. *Neurosci. Lett.* 449: 93-97.

SOURCE

Okadaic Acid (7E1) is a mouse monoclonal antibody raised against Okadaic Acid.

PRODUCT

Each vial contains 100 µg IgG₁ in 1.0 ml of PBS with 0.1% gelatin.

PROTOCOLS

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

APPLICATIONS

Okadaic Acid (7E1) is recommended for detection of Okadaic Acid by solid phase ELISA (starting dilution to be determined by researcher, dilution range 1:100-1:5000).

SELECT PRODUCT CITATIONS

1. Desmet, C., Blum, L.J. and Marquette, C.A. 2012. High-throughput multiplexed competitive immunoassay for pollutants sensing in water. *Anal. Chem.* 84: 10267-10276.
2. Desmet, C., Blum, L.J. and Marquette, C.A. 2013. Multiplex microarray ELISA versus classical ELISA, a comparison study of pollutant sensing for environmental analysis. *Environ. Sci. Process. Impacts* 15: 1876-1882.
3. Weller, M.G. 2013. Immunoassays and biosensors for the detection of cyanobacterial toxins in water. *Sensors* 13: 15085-15112.
4. Hendrickson, O.D., Zvereva, E.A., Zherdev, A.V. and Dzantiev, B.B. 2022. Cascade-enhanced lateral flow immunoassay for sensitive detection of Okadaic Acid in seawater, fish, and seafood. *Foods* 11: 1691.
5. Hendrickson, O.D., Zvereva, E.A., Solopova, O.N., Zherdev, A.V., Sveshnikov, P.G., Eremin, S.A. and Dzantiev, B.B. 2022. Double immunochromatographic test system for sensitive detection of phycotoxins domoic acid and Okadaic Acid in seawater and seafood. *Micromachines* 13: 1506.
6. Zvereva, E.A., Hendrickson, O.D., Solopova, O.N., Zherdev, A.V., Sveshnikov, P.G. and Dzantiev, B.B. 2022. Triple immunochromatographic test system for detection of priority aquatic toxins in water and fish. *Anal. Bioanal. Chem.* 414: 7553-7563.

STORAGE

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

RESEARCH USE

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