MEG-1 (637-926)/PTPN4 N-Terminal GST Tag. E.coli Active Enzyme

PP4R1, PPP4R1

Background

MEG-1, also know as Serine/threonine phosphatase 4 regulatory subunit 1, PPP4R1 or PP4R1 is crucial to cellular function. The catalytic subunit of MEG-1 or protein phosphatase 4 (PP4C) is 65% identical to PP2AC at the amino acid level and has been placed in the type 2A family of phosphatases. MEG-1 has been highly conserved between species sharing 91% amino acid identity between human and Drosophila. MEG-1 is predominantly localized in the nucleus in rat brain and liver but is most highly expressed in testis. MEG-1 is an essential enzyme in the development of Drosophila embryos.

Ordering Information

Catalog Number
X1661E

Size
20 μg

Customer Storage
Product should be stored at -80ºC. Aliquot to avoid freeze/thaw cycles

Formulation
Provided in 25 mM Tris-HCl, 75 mM NaCl, pH 8.0, 0.05% Tween, 5 mM DTT and 50% glycerol

Ship Conditions
Ship on dry ice, freeze upon arrival

Stability
Products are stable for one year from purchase when stored properly

Concentration
See vial for concentration

Source
Recombinant enyzme produced in E. coli

Activity

3.8 nmole/min/μg of enzyme; Detemined using pNPP; Reaction conditions: 50 μM pNPP, 10 min incubation at 30ºC, 0.5 μg enzyme.

Purity

>90%

Applications

Useful for the study of enzyme kinetics, regulation, to dephosphorylate target substrates and for screening inhibitors.

For research use only. Not for use in human diagnostics or therapeutics.

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Assay Methods

Materials

1. Assay Buffer: 50 mM HEPES, pH 7.4, 100 mM NaCl, 2 mM EDTA, 3 mM DTT
2. Stop solution: 2M K_2CO_3
3. 190 mM pNPP
4. Microtiter plate
5. Microtiter plate reader capable of measurements at 405 nm
6. Water bath or incubator at 30ºC

Procedure

1. Prepare reaction mixture:
a. 73 µl assay buffer
b. 26 µl pNPP (Final concentration of pNPP is 50 mM)
c. 1 µl of MEG-1
2. Mix well and start reaction at 30ºC in water bath and incubate for 10 min.
3. Add 100 µl per well of 2 M K_2CO_3 to stop the reaction.
4. Read absorbance at 405 nm using a microtiter plate reader.

References

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[2] Wada T., Miyata T., Inagi R., Nangaku M., Wagatsuma M., Suzuki D., Wadzinski B.E., Okubo K., Kurokawa K.; Cloning and characterization of a novel subunit of protein serine/threonine phosphatase 4 from mesangial cells.; J. Am. Soc. Nephrol. 12:2601-2608(2001).
[3] Zhang X, Ozawa Y, Lee H, Wen YD, Tan TH, Wadzinski BE, Seto E. Histone deacetylase 3 (HDAC3) activity is regulated by interaction with protein serine/threonine phosphatase 4.
Genes Dev. 2005 Apr 1;19(7):827-39.
[4] Kloeker S, Wadzinski BE. Purification and identification of a novel subunit of protein serine/threonine phosphatase 4. J Biol Chem. 1999 Feb 26;274(9):5339-47.

Product Specific References