PRODUCT INFORMATION



PtdIns-(3,4,5)-P₃ Binding Protein *Item No.* 10009817

Overview and Properties

Cyth3, Cytohesin 3, GRP1, GRP1 PH Domain, PIP3, PIP3[3',4',5'] Binding Protein, Synonyms:

PI(3,4,5)-P₃, PI(3,4,5)P₃ Binding Protein, Phosphatidylinositol-3,4,5-triphosphate

Source: Recombinant human N-terminal GST-tagged PIP3 expressed in E. coli

264-381 (PH domain) **Amino Acids:**

043739 Uniprot No.:

Molecular Weight: ~41.7 kDa (15.4 kDa native; 26.3 kDa as provided)

Storage: -80°C (as supplied)

Stability: ≥1 vear ≥95% **Purity:**

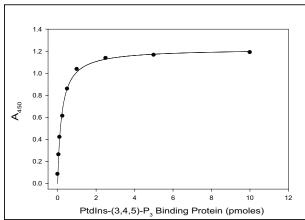
Supplied in: A solution in PBS, pH 7.2, containing 20% glycerol

Protein

Concentration: 1.0 mg/ml

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



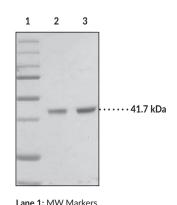


Figure 1: PtdIns-(3,4,5)-P₃-biotinamide (10 pmol/well) was applied to a streptavidincoated, 96-well plate and was detected using PtdIns-(3,4,5)-P₃ binding protein. Colorimetric readout at 450 nm was accomplished using a HRP-conjugated

Lane 2: PtdIns-(3,4,5)-P₂ (1 μg) Lane 3: PtdIns-(3,4,5)-P₃ (2 μg)

anti-GST antibody.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Pleckstrin homology (PH) domains all contain a seven-standard β-sandwich that allows binding to various species of phosphatidylinositol (PtdIns) phosphates. Most PH domains bind to PtdIns phosphates with weak affinity and low specificity. However, a small subclass binds specifically and with high-affinity for certain PtdIns phosphates. PtdIns-(3,4,5)- P_3 Binding Protein contains a highly specific PH domain that recognizes and binds PtdIns-(3,4,5)- P_3 (see Figure 1). PtdIns phosphates represent a small percentage of total membrane phospholipids. However, they play a critical role in the generation and transmission of cellular signals. PtdIns-(4,5)- P_2 can be phosphorylated by phosphoinositide (PI)-3-kinase to make PtdIns-(3,4,5)- P_3 which initiates an intricate signalling cascade that has been implicated in cancer. PtdIns-(3,4,5)- P_3 binding protein can be used in *in vitro* assays for the detection of PtdIns-(3,4,5)- P_3 in Pl₃-kinase and PTEN phosphatase assays. Cayman's PtdIns-(3,4,5)- P_3 Binding Protein is isoform 2, which differs from isoform 1 by the absence of a glycine residue at position 277.

References

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- 2. Lemmon, M.A. Traffic 4, 201-213 (2003).
- 3. Exton, J.H. Annu. Rev. Pharmacol. Toxicol. 36, 481-509 (1996).
- 4. Majerus, P.W. Annu. Rev. Biochem. 61, 225-250 (1992).
- 5. Vivanco, I. and Sawyers, C.L. Nature Reviews Cancer 2, 489-501 (2002).

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