MYPT3 (human; full length), pAb

Alternate Names: Protein Phosphatase 1 regulatory subunit 16A, PPP1R16A, Myosin phosphatase target subunit 3

Cat. No.	**68-0048-100**	Quantity:	100 µg
Lot. No.	**30287**	Storage:	-20˚C

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CERTIFICATE OF ANALYSIS | **Page 1 of 2**

This antibody was developed and validated by the Medical Research Council Protein Phosphorylation and Ubiquitylation Unit (University of Dundee, Dundee, UK).

Background

Protein ubiquitylation and protein phosphorylation are the two major mechanisms that regulate the functions of proteins in eukaryotic cells. However, these different posttranslational modifications do not operate independently of one another, but are frequently interlinked to enable biological processes to be controlled in a more complex and sophisticated manner. Studying how protein phosphorylation events control the ubiquitin system and how ubiquitylation regulates protein phosphorylation has become a focal point of the study of cell regulation and human disease. The mammalian MYPT family consists of the products of five genes, denoted MYPT1, MYPT2, MBS85, MYPT3 and TIMAP (Grassie *et al.*, 2011). Cloning of MYPT3 was first described by Skinner and Saltiel (2001). The N-terminal region of MYPT3 consists of a consensus protein phosphatase 1 (PP1) binding site and multiple ankyrin repeats. MYPT3 has a unique C-terminal region that contains several potential signalling motifs and a CaaX prenylation site. MYPT3 is distinguished from MYPT1/2 by biochemical properties that suggest a unique role in the regulation of myosin light-chain (MLC) phosphorylation (Skinner & Saltiel, 2001). MYPT3 is a substrate of Protein Kinase A (PKA) and deletion of a central conserved motif of MYPT3 resulted in enhancement

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Physical Characteristics

Quantity: 100 µg

Concentration: to be provided on shipping

Source: sheep polyclonal antibody

Immunogen: human, MYPT3 (full length) [GST-tagged]

Purification: affinity-purified using immobilized immunogen

Formulation: phosphate-buffered saline

Specificity: detects MYPT3 at ~58 kDa

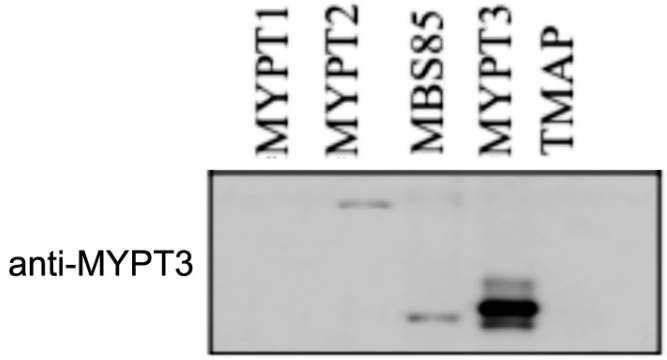
Reactivity: human; other species not tested

Stability/Storage: 12 months at -20˚C; aliquot as required

Research Applications and Quality Assurance

Western Immunoblotting: use 1 µg/ml

Immunoprecipitation: not tested



Western Blotting Analysis:
Following the transfection of HEK293 cells with FLAG-MYPT1, FLAG-MYPT2, FLAG-MYPT3, FLAG-MBS85 and FLAG-TMAP cells were lysed and immunoprecipitation was performed using a commercially available anti-FLAG antibody. By Western blotting, a band was detected predominantly from FLAG-tagged immunoprecipitation sample derived from the cell lysates transfected with FLAG-MYPT3 when probed with 1 µg/ml of anti-MYPT3 human polyclonal antibody (Cat# 68-0048-100).

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Lot-specific COA version tracker: v1.0.0

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CERTIFICATE OF ANALYSIS | **Page 2 of 2**

Background

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of the associated PP1c activity. Thus phosphorylation of MYPT3 is thought to play an important role in the regulation of the associated PP1c activity (Yong *et al.*, 2006). MYTP3 has also been shown to interact with p12, a major product encoded by Ornithine decarboxylase antizyme 3 (Oaz3) in sperm tails (Ruan *et al.*, 2011).

Antibody Production:

Anti-MYPT3 (human) polyclonal antibody was raised in sheep against MYPT3 (full length human MYPT3). The antibodies were purified by the Medical Research Council Protein Phosphorylation and Ubiquitylation Unit (MRC-PPU, University of Dundee, Dundee, U.K.) by affinity purification of the anti-MYPT3 pAbs from the sheep serum using an antigen-agarose column followed by depletion of any anti-GST antibodies using a GST-agarose column. Anti-MYPT3 (human) pAb was sourced by Ubiquigent directly from the MRC-PPU.

General References:

Grassie ME, Moffat LD, Walsh MP and MacDonald JA (2011) The myosin phosphatase targeting protein (MYPT) family: a regulated mechanism for achieving substrate specificity of the catalytic subunit of protein phosphatase type 1delta. *Arch Biochem Biophys* **510**, 147-159.

Ruan Y, Cheng M, Ou Y, Oko R., van der Hoorn FA (2011) Ornithine decarboxylase antizyme Oaz3 modulates protein phosphatase activity. *J Biol Chem* **286**, 29417-29427.

Skinner J A, Saltiel A R. (2001) Cloning and identification of MYPT3: a prenylatable myosin targetting (sic) subunit of protein phosphatase 1. *Biochem J* **356**, 257-267.

Yong J, Tan I, Lim L, Leung T. (2006) Phosphorylation of myosin phosphatase targeting subunit 3 (MYPT3) and regulation of protein phosphatase 1 by protein kinase A. *J Biol Chem* **281**,31202-11.

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