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AM20046PU-N Monoclonal Antibody to Phosphotyrosine - Purified

Quantity: 0.1 mg

Concentration: 1.0 mg/ml

Background: Protein phosphorylation is an important posttranslational modification that serves many key functions to regulate a protein's activity, localization, and protein-protein interactions. Phosphorylation is catalyzed by various specific protein kinases, which involves removing a phosphate group from ATP and covalently attaching it to to a recipient protein that acts as a substrate. Most kinases act on both serine and threonine; others act on tyrosine, and a number (dual specificity kinases) act on all three. Because phosphorylation can occur at multiple sites on any given protein, it can therefore change the function or localization of that protein at any time (3). Changing the function of these proteins has been linked to a number of diseases, including cancer, diabetes, heart disease, inflammation and neurological disorders (4-6). In particular, the phosphorylation of tyrosine is considered one of the key steps in signal transduction and regulation of enzymatic activity (7). Phosphotyrosine can be detected through specific antibodies, and are helpful in facilitating the identification of tyrosine kinase substrates (8).

Host / Isotype: Mouse / IgG1

Recommended Isotype Controls: AM03095PU-N

Clone: G104

Immunogen: Phosphotyrosine, alanine and glyceine in a 1:1:1 ratio polymerized in the presence of Keyhole Limpet Hemocyanin with 1-ethyl-3-(3'-dimentrylaminopropyl) carbodiimide.

Format:
State: Liquid purified IgG fraction
Purification: Protein G Chromatography.
Buffer System: PBS, pH 7.4 containing 50% Glycerol and 0.09% Sodium Azide as preservative.

Applications:
Western blot: 1/1000 (1,2).
1 µg/ml of this antibody was sufficient for detection of phosphorylated tyrosine residues in 10 µg of Rat tissue lysate by colorimetric Immunoblot analysis using Goat anti-Rat IgG-HRP as the secondary antibody.
Immunoprecipitation (9).
Immunofluorescence (2).
Immunohistochemitry.
Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity: Reacts with Phosphotyrosine and detects the presence of Phosphotyrosine in proteins of both unstimulated and stimulated cell lysates.
Does not cross react with Phosphoserine or Phosphothreonine.

Storage:

Store the antibody undiluted at 2-8°C for one month or (in aliquots) at -20°C for longer.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

General Readings:

1. Garton A.J., Flint A.J., and Tonks N.K. (1996) Mol and Cell Bio 16(11): 6408-6418.
2. Garton A.J., and Tonks N.K. (1999) J Bio Chem. 274(6): 3811-3818.
3. Goto H. et al. (2005) Nature Cell Biology 8: 180-187.
4. Blume-Jensen P. and Hunter T. (2001) Nature 411:355- 365.
5. Downward J. (2001) Nature 411: 759-762.
6. Pawson T. and Saxton T.M. (1999) Cell 97: 675-678.
7. Frackelton A.R. Jr., Ross A.H., and Eisen H.N. (1983) Mol Cell Biol. 3: 1343-1352.
8. Ross A.H., Baltimore D., and Eisen H.N. (1981) Nature 294: 654-656.
9. Tiganis T., Kemp B.E., and Tonks N.K. (1999) J. Bio Chem. 274(39): 27768-27775.