

Anti-Phosphotyrosine

Catalog# SMC-174D

Size: 100 μ g

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Victoria, BC V8N 4G0, Canada

This product is for *in vitro* research use only and is not intended for use in humans or animals

Product	Mouse anti-phosphotyrosine; monoclonal
Clone	G104
Immunogen	Phosphotyrosine, alanine and glycine in a 1:1:1 ratio polymerized in the presence of keyhole limpet hemocyanin with 1-ethyl-3-(3'-dimethylaminopropyl) carbodiimide.
Host and Subclass	IgG1
Cited Applications	WB (1, 2), IP (9), IF(2), IHC
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.
Species cross-reactivity	Not species specific.
Format	In PBS pH7.4, 50% glycerol and 0.1% sodium azide. Protein G Purified.
Concentration and Working dilution	1.0mg/mL; 1:1000 dilution for WB
Storage and stability	-20°C; 1 year+; shipped on cold packs or ambient

Scientific 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 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).

StressMarq

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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).

Selected References

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.

Certificate of Analysis

1 μ g/mL of SMC-174 was sufficient for detection of phosphorylated tyrosine residues in 10 μ g of rat tissue lysate by colorimetric immunoblot analysis using Goat anti-rat IgG:HRP as the secondary antibody.

Material Safety Data Sheet

Anti-Phosphotyrosine (Monoclonal Antibody) SMC-174

This product is for *in vitro* research use only and is not intended for use in humans or animals

The below information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. StressMarq shall not be held liable for any damage resulting from handling or from contact with the above product. See the Technical Specification, Packing Slip, Invoice, and Product Catalogue for additional terms and conditions of sale.

Hazardous Ingredients

The physical, chemical and toxicological properties of these components have not been fully investigated. It is recommended that all laboratory personnel follow standard laboratory safety procedures when handling this product. Safety procedures should include wearing OSHA approved safety glasses, gloves and protective clothing. Direct physical contact with this product should be avoided.

<u>Known Hazardous Components</u>	<u>CAS Number</u>	<u>Percent</u>
Sodium Azide	26628-22-8	0.1

Physical Data

This product consists of mouse immunoglobulin in PBS containing 0.1% azide in 50% glycerol shipped on gel packs. The physical properties of this product have not been investigated thoroughly.

Fire and Explosion Hazard and Reactivity Data

NOT APPLICABLE

Toxicological Properties

May be harmful by inhalation, ingestion, or skin absorption. The toxicological properties of this product have not been investigated thoroughly. Exercise due caution.

Preventative Measures

Wear chemical safety goggles and compatible chemical-resistant gloves. Avoid inhalation, contact with eyes, skin or clothing.

Spill and Leak Procedures

Observe all federal, state and local environmental regulations.

- Wear protective equipment.
- Absorb on sand or vermiculite and place in closed containers for disposal.
- Dispose or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

First Aid Measures

- If swallowed, wash out mouth with water, provided person is conscious. Call a physician.
- In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. If a rash or other irritation develops, call a physician.
- If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.
- In case of eye contact, flush with copious amounts of water for at least 15 minutes while separating the eyelids with fingers. Call a physician.