

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human SHP-1.
Source	Monoclonal Rat IgG _{2A} Clone # 255402
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant human SHP-1 Ala205-Lys595 Accession # P29350
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

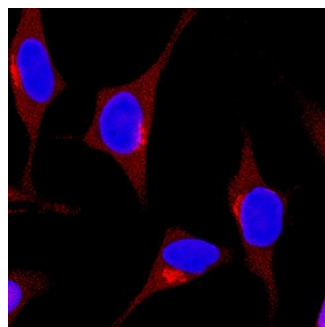
APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

	Recommended Concentration	Sample
Immunocytochemistry	3-25 µg/mL	See Below

DATA

Immunocytochemistry



SHP-1 in HeLa Human Cell Line. SHP-1 was detected in immersion fixed HeLa human cervical epithelial carcinoma cell line using Rat Anti-Human SHP-1 Monoclonal Antibody (Catalog # MAB1878) at 3 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Rat IgG Secondary Antibody (red; Catalog # NL013) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for [Fluorescent ICC Staining of Cells on Coverslips](#).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Src-Homology 2 domain Phosphatase-1 (SHP-1), also known as Protein Tyrosine Phosphatase 1C (PTP1C), PTPN6, and Hematopoietic Cell Phosphatase (HCPH), is an enzyme that selectively dephosphorylates tyrosine residues in proteins. Spontaneous point mutations in the SHP-1 gene in mice produce the "motheaten" and "motheaten viable" phenotypes that are severely autoimmune and immunodeficient (1). The enzyme is highly expressed in leukocyte cell types (2). SHP-1 has a regulatory region containing two Src homology 2 (SH2) domains that are critical for its binding to ITIM domains in inhibitory immunoreceptors (3). Deletion of the SH2 domains, as in this product, causes a marked increase in phosphatase activity (4). SHP-1 will dephosphorylate a wide variety of proteins, including the EGF receptor (5). A phosphopeptide containing the EGFR (Y992) sequence (R&D Systems, Catalog # ES006) can be used to measure the activity of SHP-1 by detecting the release of phosphate (R&D Systems, Catalog # DY996).

References:

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2. Matthews, R.J. *et al.* (1992) *Mol. Cell. Biol.* **12**:2396.
3. Burshtyn, D.N. *et al.* (1997) *J. Biol. Chem.* **272**:13066.
4. Pei, D. *et al.* (1994) *Biochemistry* **33**:15483.
5. Tomic, S. *et al.* (1995) *J. Biol. Chem.* **270**:21277.