**DESCRIPTION**

**Species Reactivity:** Human/Mouse  

**Specificity:** Detects human and mouse SHP-2 when phosphorylated at Y542.  

**Source:** Polyclonal Rabbit IgG  

**Purification:** Antigen Affinity-purified  

**Immunogen:** Phosphopeptide containing human SHP-2 Y542 site  

**Formulation:** Lyophilized from a 0.2 mg/mL filtered solution in PBS with Trehalose. See Certificate of Analysis for details.  

*Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C.*

**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.*

<table>
<thead>
<tr>
<th>Application</th>
<th>Recommended Concentration</th>
<th>Sample</th>
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</thead>
<tbody>
<tr>
<td>Western Blot</td>
<td>1 µg/mL</td>
<td>See Below</td>
</tr>
<tr>
<td>Immunocytochemistry</td>
<td>5-15 µg/mL</td>
<td>Immersion fixed human peripheral blood mononuclear cells</td>
</tr>
<tr>
<td>Simple Western</td>
<td>10 µg/mL</td>
<td>See Below</td>
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**DATA**

**Western Blot**

Detection of Mouse Phospho-SHP-2 (Y542) by Western Blot. Western blot shows lysates of NIH-3T3 mouse embryonic fibroblast cell line untreated (-) or treated (+) with 50 ng/mL Human PDGF-BB (Catalog # 200-8B) for 20 minutes. PVDF membrane was probed with 1 µg/mL of Rabbit Anti-Human/Mouse Phospho-SHP-2 (Y542) Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3790), followed by HRP-conjugated Anti-Rabbit IgG Secondary Antibody (Catalog # HAF008). A specific band was detected for Phospho-SHP-2 (Y542) at approximately 72 kDa (as indicated). The lysates were also probed for total SHP-2 with Human/Mouse/Rat SHP-2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1894). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

**Simple Western**

Detection of Mouse Phospho-SHP-2 (Y542) by Simple Western™. Simple Western lane view shows lysates of NIH-3T3 mouse embryonic fibroblast cell line untreated (-) or treated (+) with 50 ng/mL Recombinant Human PDGF-BB (Catalog # 200-8B) for 20 minutes, loaded at 0.2 mg/mL. A specific band was detected for Phospho-SHP-2 (Y542) at approximately 72 kDa (as indicated) using 10 µg/mL of Rabbit Anti-Human/Mouse Phospho-SHP-2 (Y542) Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3790). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

*Non-specific interaction with the 230 kDa Simple Western standard may be seen with this antibody.*

**PREPARATION AND STORAGE**

**Reconstitution**

Reconstitute at 0.2 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.  

- 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 domain 2-containing protein tyrosine phosphatase 2 (SHP-2), also called protein tyrosine phosphatase, non-receptor type 11 (PTPN11), PTP1D, PTP2C, and SYP, is an enzyme that dephosphorylates tyrosine residues in proteins. The protein contains two Src homology 2 (SH2) domains, which both regulate the activity of the enzyme (1) and allow it to selectively bind to SH2 sites on proteins such as Dok1, IRS1, and the insulin receptor (2). SHP-2 plays a unique stimulatory role in cell signaling. Cells lacking SHP-2 have poor mobility because the hyper-phosphorylation of FAK and other proteins in the focal adhesion complex (3) prevents turnover of cellular attachment points. Without SHP-2, sustained ERK stimulation does not take place (4). The Y992 phosphorylation site of EGFR is a particularly good substrate for SHP-2 (5) and a phosphopeptide containing this sequence can be used to measure the activity of the enzyme (R&D Systems, Catalog # ES006) by detecting release of phosphate (R&D Systems, Catalog # DY996).

**References:**