PTPN22 Antibody

**Background:** PTPN22 (Lyp/PEP) is a cytoplasmic phosphatase expressed by hematopoietic cells (1,2). PTPN22 associates with the tyrosine kinase Csk to inhibit T cell receptor signaling through inactivation of Src kinases (3,4). Csk phosphorylates Src kinases on an inhibitory tyrosine, while PTPN22 dephosphorylates an activating site (4). PTPN22(-/-) mice have higher levels of activated Lck than wild-type, resulting in greater T cell expansion and increased serum antibody levels (5). Research studies have shown that a single-nucleotide polymorphism, 1685T of the PTPN22 gene which encodes the amino acid substitution R620W, confers increased risk for multiple autoimmune diseases including type I diabetes, rheumatoid arthritis, systemic lupus erythematosus, and Graves disease (6-9). Interestingly, although the R620W substitution disrupts the interaction between Csk and PTPN22, it is actually a gain-of-function mutation resulting in increased phosphatase activity (6,10,11). Recent evidence suggests that the autoimmune phenotype associated with the R620W variant is the result of increased calpain-mediated degradation and decreased protein levels of PTPN22 (12).

**Applications**

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<th>Applications</th>
<th>Species Cross-Reactivity</th>
<th>Molecular Wt.</th>
<th>Source</th>
<th>Rabbit**</th>
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<td>W, IP</td>
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<td>98 kDa</td>
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**Source/Purification:** Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding His301 of human PTPN22 protein. Antibodies are purified by protein A and peptide affinity chromatography.

**Storage:** Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at −20°C. Do not aliquot the antibody.

**Recommended Antibody Dilutions:**

- Western blotting: 1:1000
- Immunoprecipitation: 1:50

**For product specific protocols please see the web page for this product at www.cellsignal.com.**

**Background References:**