

## Rabbit Anti-PTPN1 antibody

SL0182R

**Product Name** PTPN1

**Chinese Name** 蛋白酪氨酸磷酸酶-1B 抗体

**Alias** PTN1\_HUMAN; Tyrosine-protein phosphatase non-receptor type 1; EC:3.1.3.48; PTP1B; Protein tyrosine phosphatase 1B (PTP-1B);

**Research Area** Cell biology Neurobiology Signal transduction Kinases and Phosphatases

**Immunogen Species** Rabbit

**Clonality** Polyclonal

**React Species** Human, Rat, (predicted: Mouse, Pig, Cow, Horse, Rabbit, )

WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,ICC/IF=1:100-500,IF=1:100-500,Flow-Cytometry  
(Paraffin sections need antigen repair)

**Applications** not yet tested in other applications.  
optimal dilutions/concentrations should be determined by the end user.

**Theoretical molecular weight** 48kDa

**Cellular localization** cytoplasmic The cell membrane

**Form** Liquid

**Concentration** 1mg/ml

**immunogen** KLH conjugated synthetic peptide derived from human PTP-1B: 1-100/435

**Lsotype** IgG

**Purification** affinity purified by Protein A

**Buffer Solution** 1M TBS(pH7.4) with 1% BSA, 3% Proclin300 and 50% Glycerol.

**Storage** Shipped at 4°C. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.

**Attention** This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

**PubMed** [PubMed](#)

**Product** The protein encoded by this gene is the founding member of the protein tyrosine phosphatase (PTP) family.

## Detail

isolated and identified based on its enzymatic activity and amino acid sequence. PTPs catalyze the hydrolysis of phosphate monoesters specifically on tyrosine residues. Members of the PTP family share a highly conserved motif, which is essential for the catalytic activity. PTPs are known to be signaling molecules that regulate cellular processes including cell growth, differentiation, mitotic cycle, and oncogenic transformation. This PTP has been shown to act as a negative regulator of insulin signaling by dephosphorylating the phosphotyrosine residues of the insulin receptor kinase. This PTP was also reported to dephosphorylate epidermal growth factor receptor kinase and JAK2 and TYK2 kinases, which implicated the role of this PTP in cell growth control, and cell response to insulin stimulation. Two transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq, Jul 2013]

### Function:

Tyrosine-protein phosphatase which acts as a regulator of endoplasmic reticulum unfolded protein response. Mediates dephosphorylation of EIF2AK3/PERK; inactivating the protein kinase activity of EIF2AK3. May play an important role in CKII- and p60c-src-induced signal transduction cascades. May regulate the EPHA3-EPHA3 signaling pathway which modulates cell reorganization and cell-cell repulsion.

### Subunit:

Interacts with EPHA3 (phosphorylated); dephosphorylates EPHA3 and may regulate its trafficking and membrane function.

### Subcellular Location:

Endoplasmic reticulum membrane; Peripheral membrane protein; Cytoplasmic side. Note=Interacts with EPHA3 at the cell membrane.

### Tissue Specificity:

Most abundant in testis. Also found in kidney, spleen, muscle, liver, heart and brain.

### Post-translational modifications:

Ser-50 is the major site of phosphorylation as compared to Ser-242 and Ser-243. Activated by phosphorylation at Ser-50.

S-nitrosylation of Cys-215 inactivates the enzyme activity.

Sulfhydrylation at Cys-215 following endoplasmic reticulum stress inactivates the enzyme activity. Inactivates EIF2AK3/PERK activity.

### SWISS:

P18031

### Gene ID:

5770

### Database links:

[Entrez Gene: 5770](#) Human

[Entrez Gene: 19246](#) Mouse

[Entrez Gene: 24697](#) Rat

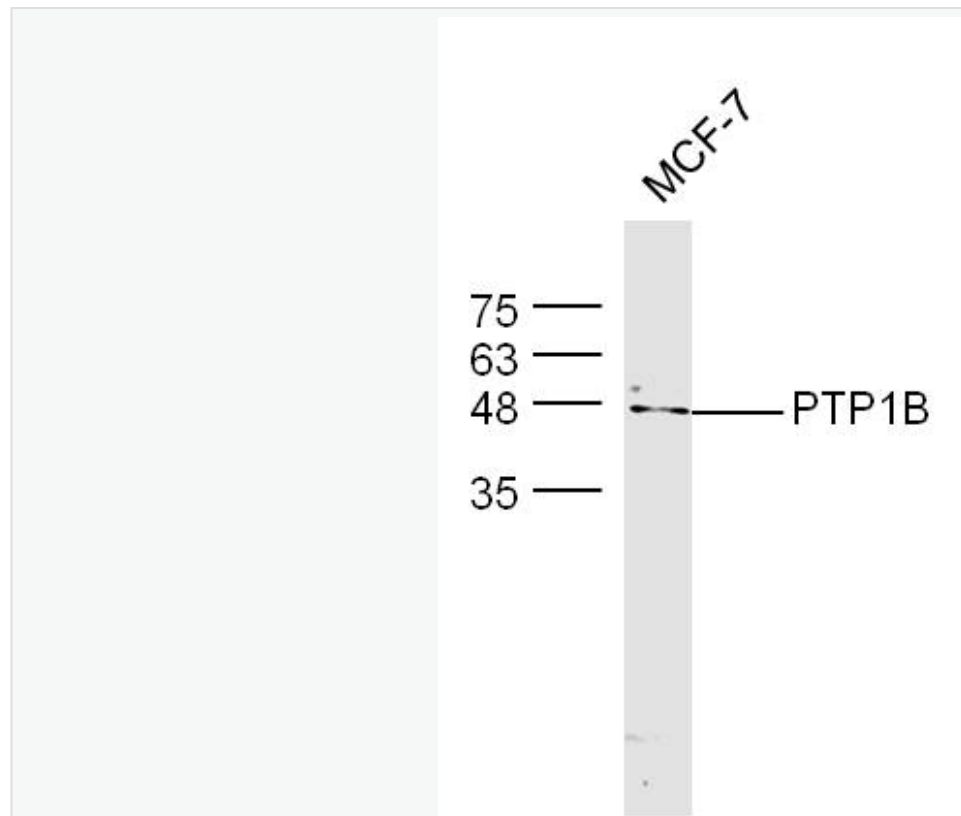
[SwissProt: P18031](#) Human

[SwissProt: P35821](#) Mouse

[SwissProt: P20417](#) Rat

蛋白酪氨酸磷酸酶 1B (PTP1B) 是一种胰岛素信号的负性调节因子, 与肥胖症和 2 型 Diabetes 病及发展关系密切。对 P-tyr 基因敲除小鼠的研究表明, 缺失 PTP1B 小鼠的胰岛素敏感性并对肥胖有一定的抵抗作用, 而另一些对动物和人体的研究结果却与此相反, 发现 PTP1B 引起胰岛素抵抗、瘦素抵抗及影响脂代谢等而导致肥胖症和 2 型 Diabetes 的发生。一些特异小分子抑制剂已经开发并用于肥胖和 Diabetes 的治疗中。

**Product  
Picture**



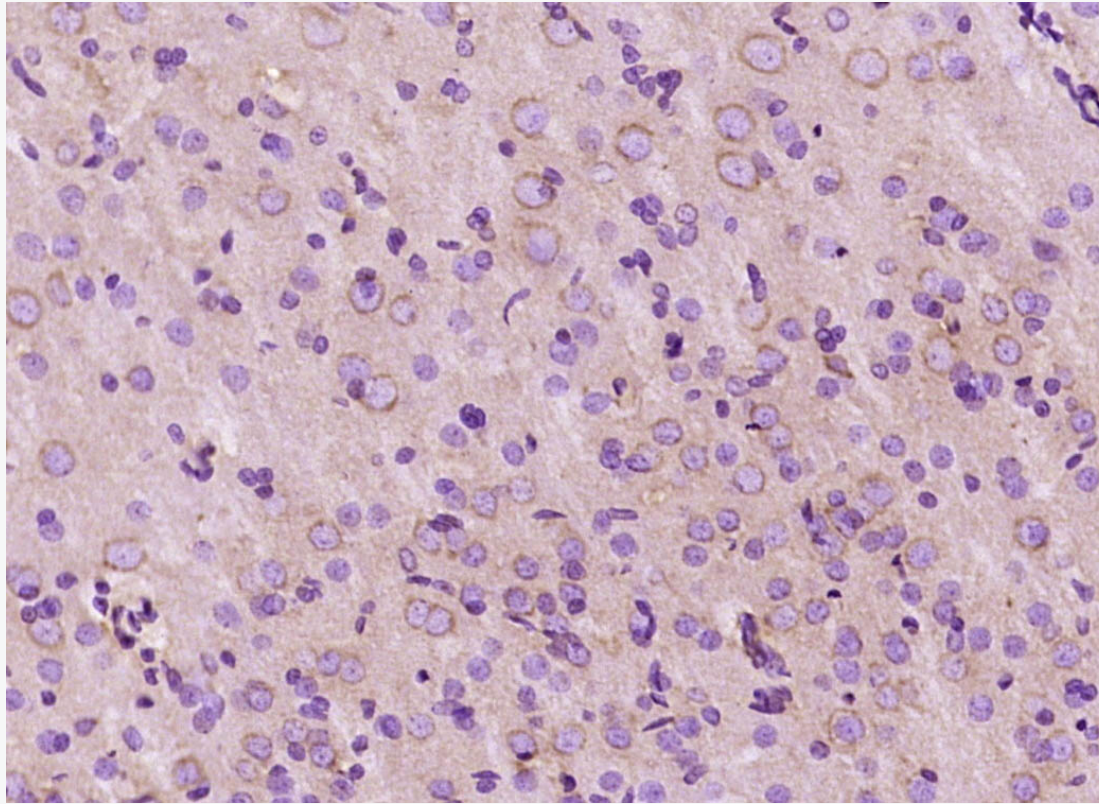
Sample:Mcf-7 Cell Lysate at 40 ug

Primary: Anti- PTP1B (SL0182R)at 1/300 dilution

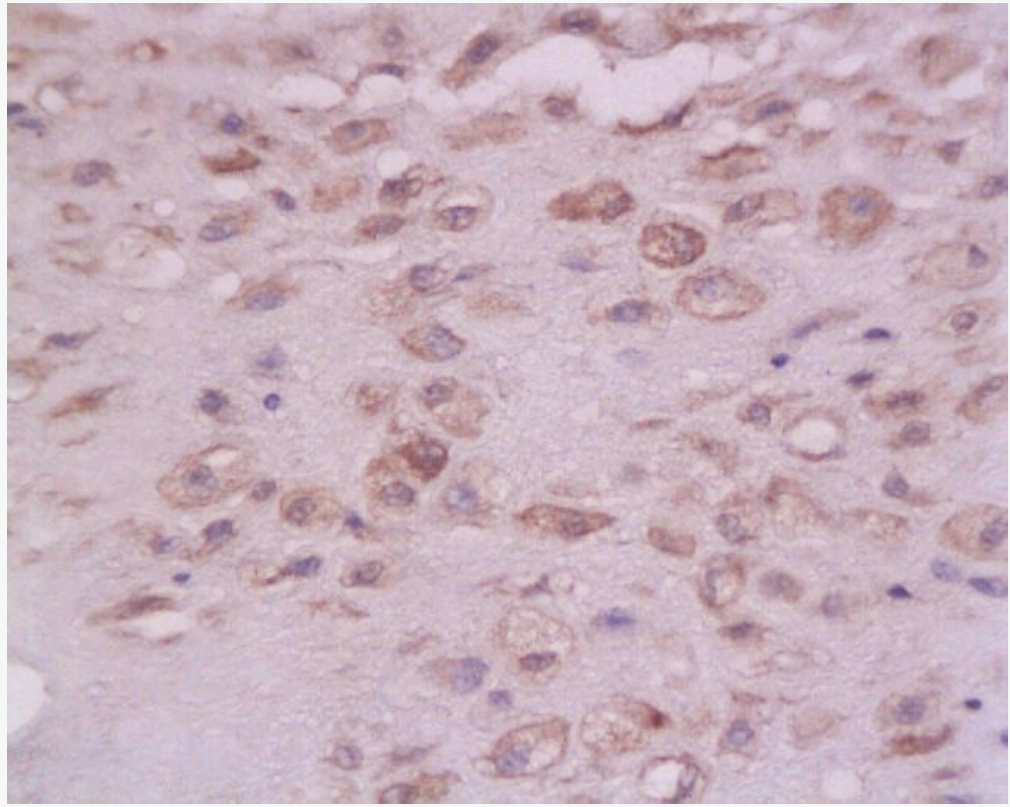
Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution

Predicted band size: 48kD

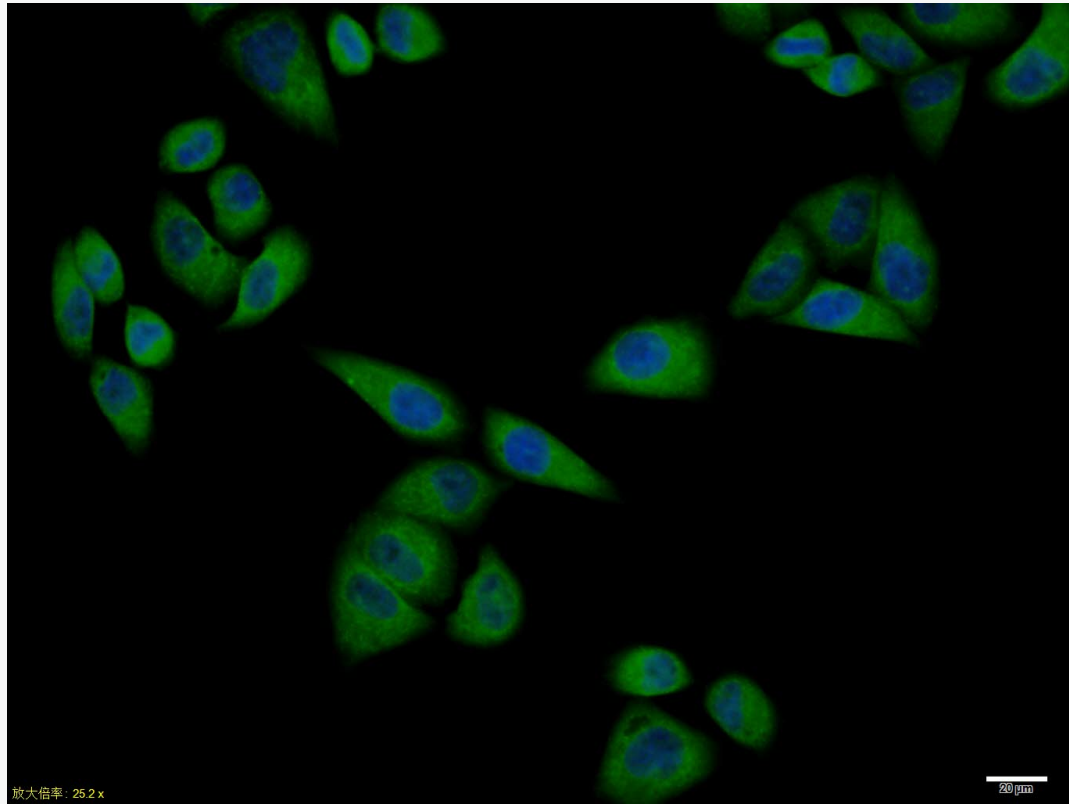
Observed band size: 48kD



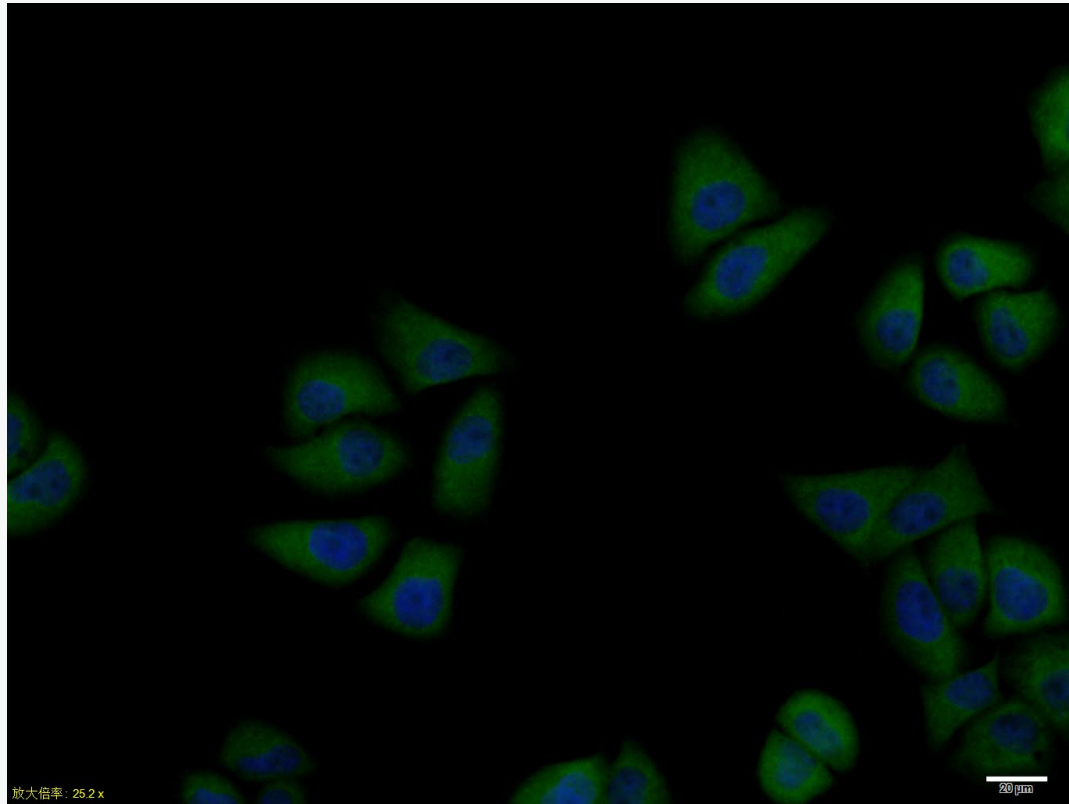
Paraformaldehyde-fixed, paraffin embedded (rat brain tissue); Antigen retrieval by boiling in 0.1M citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20min; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (PTP1B) PTP1B Antibody, Unconjugated (SL0182R) at 1:200 overnight at 4°C, followed by operating according to the DAB Kit(Rabbit) (sp-0023) instructions and DAB staining.



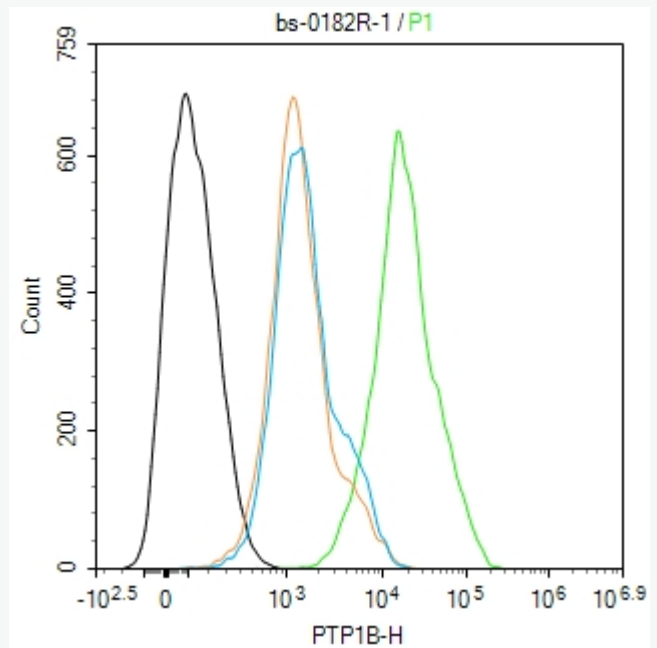
Tissue/cell: human endometrium tissue; 4% Paraformaldehyde-fixed and paraffin-embedded;  
Antigen retrieval: citrate buffer ( 1M, pH 6.0 ), Boiling bathing for 15min; Block endogenous  
by 3% Hydrogen peroxide for 30min; Blocking buffer (normal goat serum,C-0005) at 37°C fo  
Incubation: Anti-PTP-1B Polyclonal Antibody, Unconjugated(SL0182R) 1:200, overnight at 4  
followed by conjugation to the secondary antibody(SP-0023) and DAB(C-0010) staining



Hela cell; 4% Paraformaldehyde-fixed; Triton X-100 at room temperature for 20 min; Blocking (normal goat serum, C-0005) at 37°C for 20 min; Antibody incubation with (PTP1B) polyclonal Antibody, Unconjugated (SL0182R) 1:100, 90 minutes at 37°C; followed by a conjugated Goat Anti-Rabbit IgG antibody at 37°C for 90 minutes, DAPI (blue, C02-04002) was used to stain the nuclei.



Hela cell; 4% Paraformaldehyde-fixed; Triton X-100 at room temperature for 20 min; Blocking (normal goat serum, C-0005) at 37°C for 20 min; Antibody incubation with (PTP1B) polyclonal Antibody, Unconjugated (SL0182R) 1:100, 90 minutes at 37°C; followed by a conjugated Goat Anti-Rabbit IgG antibody at 37°C for 90 minutes, DAPI (blue, C02-04002) was used to stain the nuclei.



Blank control (black line) :HUVEC.

Primary Antibody (green line): Rabbit Anti-PTP1B antibody (SL0182R)

Dilution: 1ug/Test;

Secondary Antibody (white blue line) : Goat anti-rabbit IgG-AF488

Dilution: 0.5ug/Test.

Isotype control (orange line) : Normal Rabbit IgG

#### Protocol

The cells were fixed with 4% PFA (10min at room temperature)and then permeabilized with 90% methanol for 20 min at -20°C, The cells were then incubated in 5%BSA to block non-specific protein-protein interactions for 30 min at room temperature .Cells stained with Primary Antibody for 30 min at room temperature. The secondary antibody used for 40 min at room temperature. Acquisition



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20,000 events was performed.