

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human SOD3/EC-SOD in Western blots. In Western blots, no cross-reactivity with recombinant human (rh) SOD1 or rhSOD2 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant human SOD3/EC-SOD Trp19-Ala240 Accession # P08294
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 as a 0.2 µm filtered solution in PBS.

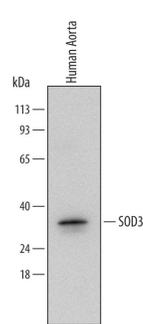
APPLICATIONS

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
Western Blot	0.2 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below
Simple Western	10 µg/mL	See Below

DATA

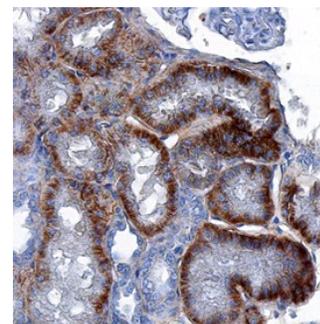
Western Blot



Detection of Human SOD3/EC-SOD by Western Blot.

Western blot shows lysates of human aorta tissue. PVDF Membrane was probed with 0.2 µg/mL of Goat Anti-Human SOD3/EC-SOD Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3420) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF017). A specific band was detected for SOD3/EC-SOD at approximately 30 kDa (as indicated). This experiment was conducted under reducing conditions and using *Immunoblot Buffer Group 2*.

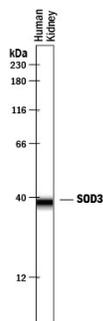
Immunohistochemistry



SOD3/EC-SOD in Human Kidney.

SOD3/EC-SOD was detected in immersion fixed paraffin-embedded sections of human kidney using Goat Anti-Human SOD3/EC-SOD Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3420) at 5 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). Specific staining was localized to the cytoplasm of epithelial cells in convoluted tubules. View our protocol for *Chromogenic IHC Staining of Paraffin-embedded Tissue Sections*.

Simple Western



Detection of Human SOD3/EC-SOD by Simple Western™.

Simple Western lane view shows lysates of human kidney tissue, loaded at 0.2 mg/mL. A specific band was detected for SOD3/EC-SOD at approximately 38 kDa (as indicated) using 10 µg/mL of Goat Anti-Human SOD3/EC-SOD Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3420) followed by 1:50 dilution of HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF109). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

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. <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

Superoxide Dismutases (SODs), originally identified as Indophenoloxidase (IPO), are enzymes that catalyze the conversion of naturally-occurring, but harmful, superoxide radicals into molecular oxygen and hydrogen peroxide. Superoxide Dismutases 3, SOD3, also known as extracellular (EC) SOD, is tetrameric glycoprotein with an apparent subunit molecular weight of about 30 kDa. Three isoenzymes of SOD have been identified and are functionally related but have very modest sequence homology. SOD3 shares 23% and 17% sequence identity with SOD1 and SOD2, respectively. SOD3 shares ~64% sequence homology with mouse and rat SOD3. Like SOD1, SOD3 binds one Cu^{2+} and Zn^{2+} ions per subunit but differs in sequence and tissue distribution. SOD3 is a secretory protein and is synthesized with a putative 18-amino acid signal peptide preceding the 222 amino acids in the mature SOD3. SOD3 is found in plasma, lymph, and synovial fluid as well as in tissues. SOD3 binds on the surface of endothelial cells through the heparan sulfate proteoglycan and eliminates the oxygen radicals from the NADP-dependent oxidative system of neutrophils.