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Phospho-eNOS (Ser1177) Antibody

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Entrez-Gene ID #4846
UniProt Acc. #P29474

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, B, Pg (M, R)	140 kDa	Rabbit**

Background: Endothelial nitric-oxide synthase (eNOS) is an important enzyme in the cardiovascular system. It catalyzes the production of nitric oxide (NO), a key regulator of blood pressure, vascular remodeling and angiogenesis (1,2). The activity of eNOS is regulated by phosphorylation at multiple sites. The two most thoroughly studied sites are the activation site Ser1177 and the inhibitory site Thr495 (3). Several protein kinases including Akt/PKB, PKA and AMPK activate eNOS by phosphorylating Ser1177 in response to various stimuli (4,5). In contrast, bradykinin and hydrogen peroxide activate eNOS activity by promoting Thr495 dephosphorylation (6,7).

Specificity/Sensitivity: Phospho-eNOS (Ser1177) Antibody detects endogenous levels of eNOS only when phosphorylated at Ser1177.

Source/Purification: Polyclonal antibodies are produced by immunizing rabbits with a synthetic phospho-peptide (KLH-coupled) corresponding to residues surrounding Ser1177 of human eNOS. Antibodies are purified by protein A and peptide affinity chromatography.

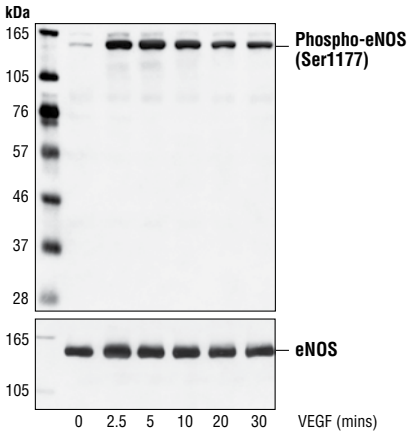
Selected Application References:

Brouet, A. et al. (2001) Hsp90 ensures the transition from the early Ca^{2+}-dependent to the late phosphorylation-dependent activation of the endothelial nitric-oxide synthase in vascular endothelial growth factor-exposed endothelial cells. *J. Biol. Chem.* 276, 32663–32669. Application: W.

Thomas, S.R. et al. (2002) Hydrogen peroxide activates endothelial nitric-oxide synthase through coordinated phosphorylation and dephosphorylation via a phosphoinositide 3-kinase-dependent signaling pathway. *J. Biol. Chem.* 277, 6017–6024. Application: W.

Du, X.L. et al. (2001) Hyperglycemia inhibits endothelial nitric oxide synthase activity by posttranslational modification at the Akt site. *J. Clin. Invest.* 108, 1341–1348. Application: W.

Boo, Y.C. et al. (2002) Shear stress stimulates phosphorylation of endothelial nitric-oxide synthase at Ser1179 by Akt-independent mechanisms: role of protein kinase A. *J. Biol. Chem.* 277, 3388–3396. Application: W.



Western blot analysis of extracts from bovine aortic endothelial cells (BAECs), untreated or VEGF-treated (50 ng/ml) for the indicated times, using Phospho-eNOS (Ser1177) Antibody (upper) or control eNOS antibody (lower).

Background References:

(1) Fulton, D. et al. (2001) *J. Pharmacol. Exp. Ther.* 299, 818–824.

(2) Shaul, P.W. (2002) *Annu. Rev. Physiol.* 64, 749–774.

(3) Chen, Z.P. et al. (1999) *FEBS Lett.* 443, 285–289.

(4) Dimmeler, S. et al. (1999) *Nature* 399, 601–605.

(5) Fulton, D. et al. (1999) *Nature* 399, 597–601.

(6) Harris, M.B. et al. (2001) *J. Biol. Chem.* 276, 16587–16591.

(7) Thomas, S.R. et al. (2002) *J. Biol. Chem.* 277, 6017–6024.

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.*

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western Blotting	1:1000

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

Please visit www.cellsignal.com for a complete listing of recommended companion products.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

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Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide

Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebra fish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.