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STEP (D7E2) Rabbit mAb

For Research Use Only. Not for Use in Diagnostic Procedures.

Applications: W, IP	Sensitivity: Endogenous	MW (kDa): 46, 61	Source/Isotype: Rabbit IgG	UniProt ID: #P54829	Entrez-Gene Id: 84867
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Product Usage Information	Application Western Blotting Immunoprecipitation	Dilution 1:1000 1:50
Storage	Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.	
Specificity/Sensitivity	STEP (D7E2) Rabbit mAb detects endogenous levels of total STEP46 and STEP61 proteins.	
Source / Purification	Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro225 of human STEP61 protein.	
Background	Striatal enriched phosphatase (STEP, also known as PTPN5), is a protein tyrosine phosphatase expressed in dopaminergic neurons of the central nervous system (1). Alternative splicing produces the cytosolic STEP46 and the membrane-associated STEP61 isoforms of STEP. Dopamine activates D1 receptors and PKA, which in turn phosphorylate both isoforms of STEP. Phosphorylation of STEP61 occurs at Ser160 and Ser221, while STEP46 is phosphorylated at Ser49 (equivalent to Ser221 of STEP61) (2). NMDA-mediated activation of STEP is an important mechanism for regulation of Erk activity in neurons (3). Furthermore, STEP is involved in the regulation of both NMDAR and AMPAR trafficking (4,5). Due to its importance in cognitive function, STEP may play a role in Alzheimer's disease (1).	
Background References	<ol style="list-style-type: none"> 1. Braithwaite, S.P. et al. (2006) <i>Trends Neurosci</i> 29, 452-8. 2. Paul, S. et al. (2000) <i>J Neurosci</i> 20, 5630-8. 3. Paul, S. et al. (2003) <i>Nat Neurosci</i> 6, 34-42. 4. Braithwaite, S.P. et al. (2006) <i>Eur J Neurosci</i> 23, 2847-56. 5. Zhang, Y. et al. (2008) <i>J Neurosci</i> 28, 10561-6. 	

Species Reactivity	Species reactivity is determined by testing in at least one approved application (e.g., western blot).
Western Blot Buffer	IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.
Applications Key	W: Western Blotting IP: Immunoprecipitation
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