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Product datasheet for TA328615

BDNF Rabbit Polyclonal Antibody

Product data:

Product Type:	Primary Antibodies
Applications:	IHC, WB
Recommended Dilution:	WB: 1:200-1:2000; IHC: 1:100-1:3000
Reactivity:	Human, Mouse, Rat
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Peptide (C)VLEKVPVSKQLK, corresponding to amino acid residues 166-178 of human BDNF (precursor).
Formulation:	Lyophilized. Concentration before lyophilization ~0.8mg/ml (lot dependent, please refer to CoA along with shipment for actual concentration). Buffer before lyophilization: Phosphate buffered saline (PBS) pH 7.4, 1% BSA, 0.025% NaN3.
Reconstitution Method:	Add 50 ul double distilled water (DDW) to the lyophilized powder.
Purification:	Affinity purified on immobilized antigen.
Conjugation:	Unconjugated
Storage:	Store at -20°C as received.
Stability:	Stable for 12 months from date of receipt.
Gene Name:	brain-derived neurotrophic factor
Database Link:	NP_001700 Entrez Gene 12064 MouseEntrez Gene 24225 RatEntrez Gene 627 Human P23560

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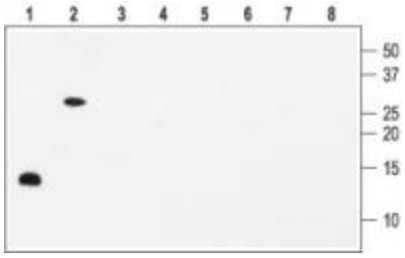
Background: Brain derived neurotrophic factor (BDNF) is a member of the neurotrophin family of growth factors which includes nerve growth factor (NGF), neurotrophin-3 (NT-3) and neurotrophin-4/5 (NT-4/5). All neurotrophins are synthesized as preproneurotrophin precursors that are subsequently processed within the intracellular transport pathway to yield proneurotrophins that are further processed to generate the mature form. The mature form of BDNF is a non-covalent stable homodimer that can be secreted in both constitutive and regulated pathways. BDNF conveys its activity by binding to two classes of receptors, a member of the Trk receptor tyrosine kinase family (TrkB) and the pan-neurotrophin receptor p75NTR. Binding of BDNF to the TrkB receptor triggers ligand-induced dimerization and autophosphorylation of tyrosine residues. This activates various signaling cascades such the MAPK, PI3K and PLC? pathways that are involved in cell growth, survival and differentiation of neurons in the central and peripheral nervous system. Interestingly, recent evidence suggests that BDNF may influence target cell function via ion channel modulation. Ion channel activity in the target cells can be modulated by a TrkB-mediated mechanism that has not yet been determined. BDNF is able to block both Kv1.3 and AMPA-subtype glutamate ion channel currents in sensory neurons, while it can induce activation of the TRPC3 cation channel in neurons and of the Nav1.9 Na+ channel in hippocampal neurons. These newly recognized BDNF actions underlie its â??rapidâ? neuronal functions that include changes in neuronal excitability, plasticity and synaptic transmission. Due to the high degree of homology between the different neurotrophins it has been difficult to produce truly specific antibodies against any of them. We have now produced a highly specific antibody against BDNF which recognizes exclusively BDNF.

Synonyms: ANON2; BULN2

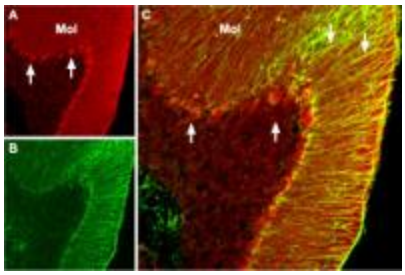
Protein Families: Adult stem cells, Druggable Genome, Embryonic stem cells, ES Cell Differentiation/IPS, Induced pluripotent stem cells, Secreted Protein, Transmembrane

Protein Pathways: Huntington's disease, MAPK signaling pathway, Neurotrophin signaling pathway

Product images:



Western blot analysis with Anti-BDNF antibody : 1, 5. hBDNF. 2, 6. proBDNF (WT-mouse). 3, 7. hβ-NGF. 4, 8. hNT-3. Lanes 1-4 Anti-BDNF antibody (1:200). Lanes 5-8 Anti-BDNF antibody, preincubated with the control peptide antigen. Note that the antibody recognizes both BDNF and proBDNF but fails to recognize the closely related NGF and NT-3 neurotrophins.



IHC staining of mouse cerebellum with Anti-BDNF antibody. A. BDNF (red) appears in Purkinje cells (upward pointing arrows) and is distributed diffusely in the molecular layer (Mol) including in astrocytic fibers (downward pointing arrows). B. staining of astrocytic fibers with glial fibrillary acidic protein (green) in the same section demonstrates the distribution of BDNF to neuronal as well as to astrocytic cellular components. C. Confocal merge of BDNF and GFAP.