Human Carboxypeptidase E/CPE Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF3587

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Carboxypeptidase E/CPE in direct ELISAs and Western blots. In direct ELISAs, less than 5% cross-reactivity with recombinant human CPM is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Carboxypeptidase E/CPE Arg42-Ser453 Accession # P16870
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 either lyophilized or as a 0.2 μm filtered solution in PBS.

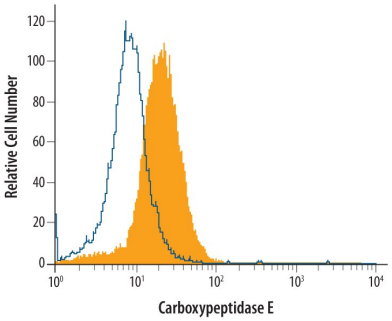
APPLICATIONS

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	0.1 µg/mL	Recombinant Human Carboxypeptidase E/CPE (Catalog # 3587-ZN)
Immunocytochemistry	5-15 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below
Immunoprecipitation	25 µg/mL	Conditioned cell culture medium spiked with Recombinant Human Carboxypeptidase E/CPE (Catalog # 3587-ZN), see our available Western blot detection antibodies
Intracellular Staining by Flow Cytometry	2.5 µg/10^6 cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

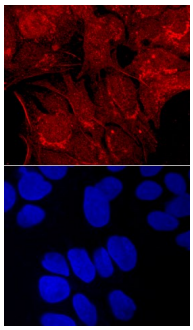
DATA

Intracellular Staining by Flow Cytometry



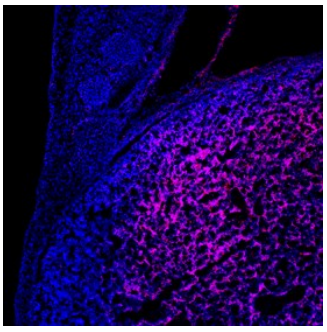
Detection of Carboxypeptidase E/CPE in A172 Human Cell Line by Flow Cytometry.
A172 human glioblastoma cell line was stained with Goat Anti-Human Carboxypeptidase E/CPE Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3587, filled histogram) or control antibody (Catalog # AB-108-C, open histogram), followed by Phycoerythrin-conjugated Anti-Goat IgG Secondary Antibody (Catalog # F0107). To facilitate intracellular staining, cells were fixed with paraformaldehyde and permeabilized with methanol and saponin.

Immunocytochemistry



Carboxypeptidase E/CPE in HepG2 Human Cell Line.
Carboxypeptidase E/CPE was detected in immersion fixed HepG2 human hepatocellular carcinoma cell line using Goat Anti-Human Carboxypeptidase E/CPE Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3587) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red, upper panel; Catalog # NL001) and counterstained with DAPI (blue, lower panel). Specific staining was localized to cell surfaces and cytoplasm. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

Immunohistochemistry



Carboxypeptidase E/CPE in Mouse Embryo.
Carboxypeptidase E/CPE was detected in immersion fixed frozen sections of mouse embryo (9.5 d.p.c.) using Goat Anti-Human Carboxypeptidase E/CPE Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3587) at 10 µg/mL overnight at 4 °C. Tissue was stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained with DAPI (blue). Specific staining was localized to the developing liver. View our protocol for Fluorescent IHC Staining of Frozen Tissue Sections.

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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.** • 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

Encoded by the CPE gene and also known as Carboxypeptidase H, CPE is a single chain peptidase with an optimal pH range between 5.0-6.0. It is a zinc metallocarboxypeptidase that removes basic amino acids from the C-terminus of peptides (1). Like other metallocarboxypeptidases, its activity is stimulated by millimolar concentrations of Co^{2+}. Its activity is regulated by pH-induced aggregation above pH 6.0. Its major function seems to process numerous peptide hormones and neurotransmitters. In addition to its proteolytic function, it also plays a role as a sorting receptor (2), which may be attributed to the sorting of this protein into the secretory pathway. The C-terminal domain of CPE causes the peripheral association of CPE with membranes below neutral pH, resulting in the association of this protein into membranes (3). CPE knockout mice live but become obese due to impaired glucose clearance and insulin resistance (4).

References:

1. Fricker, L.D. (2004) in *Handbook of Proteolytic Enzymes*, Barrett, A.J. *et al.* eds. pp. 840.
2. Cool, D.R. *et al.* (1997) Cell **88:**73.
3. Zhang, C-F. *et al.* (2003) Biochem. J. **369:**453.
4. Cawley, N.X. *et al.* (2004) Endocrinology **145:**5807.

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