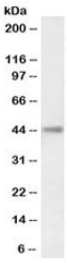
# CA12 Antibody Biotin Conjugate (R35918BTN)

| Catalog No. | Formulation | Size |
|---|---|---|
| R35918BTN | 0.5 mg/ml in 1X TBS, pH7.3, with 0.5% BSA (US sourced) and 0.02% sodium azide | 100 ug |

**Bulk quote request**

| | |
|---|---|
| **Availability** | 1-3 business days |
| **Species Reactivity** | Human |
| **Format** | Biotin Conjugate |
| **Host** | Goat |
| **Clonality** | Polyclonal (goat origin) |
| **Isotype** | Goat Ig |
| **Purity** | Antigen affinity |
| **Gene ID** | 771 |
| **Applications** | Western blot: 0.1-0.3ug/ml<br>Immunohistochemistry (FFPE): suitable<br>ELISA (peptide) LOD: 1:128000 |
| **Limitations** | This CA12 Antibody Biotin Conjugate is available for research use only. |




CA12 Antibody Biotin Conjugate WB Analysis. Western blot testing of human kidney lysate with biotinylated CA12 antibody at 0.1ug/ml. Predicted molecular weight: ~40kDa.

## Description

CA12 Antibody Biotin Conjugate recognizes carbonic anhydrase XII (CA12), a zinc-dependent metalloenzyme that catalyzes the reversible conversion of carbon dioxide and water into bicarbonate and hydrogen ions. Also known as carbonic anhydrase 12 or CA XII, this membrane-associated enzyme belongs to the alpha-carbonic anhydrase family and plays an important role in acid-base balance, bicarbonate transport, and cellular pH homeostasis. Its extracellular catalytic domain enables the regulation of pH at the cell surface.

The human CA12 gene is located on chromosome 15 and encodes a type I transmembrane glycoprotein of approximately 354 amino acids. The protein contains an extracellular zinc-binding catalytic domain, a single transmembrane region, and a short intracellular tail. Glycosylation can influence its apparent molecular weight and biochemical properties. Carbonic anhydrase XII shares structural similarities with carbonic anhydrase IX (CA9), although the two enzymes differ in their expression patterns and regulatory mechanisms.

CA12 contributes to extracellular pH regulation by facilitating bicarbonate production and transport. In cancer cells, increased glycolytic activity and altered metabolism can promote extracellular acidification. Membrane-associated carbonic anhydrases help maintain intracellular pH while contributing to the acidic tumor microenvironment. These processes can influence tumor cell survival, proliferation, and adaptation to metabolic stress.

Carbonic anhydrase XII expression has been documented in several malignancies, including breast and kidney cancers. In certain breast cancer subtypes, CA12 expression is associated with estrogen receptor signaling and differentiated tumor phenotypes. Although hypoxia-associated pathways can influence CA12 expression, its regulation differs from the strongly hypoxia-responsive CA9 protein. These characteristics have generated interest in carbonic anhydrase XII as a potential cancer biomarker and therapeutic target.

Beyond oncology, CA12 participates in epithelial ion transport, bicarbonate regulation, and fluid homeostasis. Inherited CA12 mutations have been associated with disorders affecting salt balance and sweating. Biotin conjugation provides a labeling strategy that enables antibody detection through avidin- or streptavidin-based systems, offering flexibility in assay development. NSJ Bioreagents offers this biotinylated antibody for research into carbonic anhydrase biology and pH regulation. A CA12 Antibody Biotin Conjugate provides a tool for investigating CA12 expression, epithelial physiology, and cancer-associated metabolic processes.

For an alternative antibody targeting the same protein, see our Carbonic Anhydrase XII Antibody.

## Application Notes

Optimal dilution of the CA12 Antibody Biotin Conjugate should be determined by the researcher.

## Immunogen

Amino acids SHLQHVKYKGQE were used as the immunogen for this CA12 Antibody Biotin Conjugate.

## Storage

Aliquot and store the CA12 Antibody Biotin Conjugate at -20oC.

## Alternate Names

Carbonic Anhydrase XII antibody, CA XII antibody, Carbonic Anhydrase 12 Polyclonal antibody, Carbonate Dehydratase XII antibody


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