Human Angiopoietin-2 Antibody

Antigen Affinity-purified Polyclonal Goat IgG

Catalog Number: AF623

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Angiopoietin-2 in direct ELISAs and Western blots. In direct ELISAs, 100% cross-reactivity with recombinant mouse Angiopoietin-2 is observed and less than 5% cross-reactivity with recombinant human Angiopoietin-1 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Angiopoietin-2 Asp68-Phe496 Accession # O15123
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose.

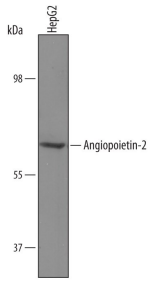
APPLICATIONS

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	1 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below

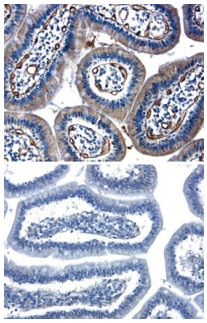
DATA

Western Blot



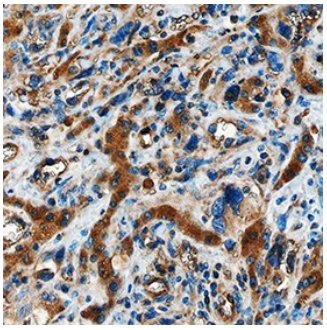
Detection of Human Angiopoietin-2 by Western Blot. Western blot shows lysates of HepG2 human hepatocellular carcinoma cell line. PVDF Membrane was probed with 1 µg/mL of Goat Anti-Human Angiopoietin-2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF623) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # Catalog # HAF019). A specific band was detected for Angiopoietin-2 at approximately 65 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunohistochemistry



Angiopoietin-2 in Human Gastrointestinal Cancer Tissue. Angiopoietin-2 was detected in immersion fixed paraffin-embedded sections of human gastrointestinal cancer tissue using 15 µg/mL Goat Anti-Human Angiopoietin-2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF623) overnight at 4 °C. Tissue was stained with the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # Catalog # CTS008) and counterstained with hematoxylin (blue). Lower panel shows a lack of labeling if primary antibodies are omitted and tissue is stained only with secondary antibody followed by incubation with detection reagents. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

Immunohistochemistry



Angiopoietin-2 in Human Liver Cancer Tissue. Angiopoietin-2 was detected in immersion fixed paraffin-embedded sections of human liver cancer tissue using Goat Anti-Human Angiopoietin-2 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF623) at 3 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # Catalog # CTS008) and counterstained with hematoxylin (blue). Specific staining was localized to cytoplasm in cancer cells. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449

Human Angiopoietin-2 Antibody

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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.
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

Angiopoietin-2 (Ang-2; also ANGPT2) is a secreted glycoprotein that plays a complex role in angiogenesis and inflammation. Mature Ang-2 is 478 amino acids (aa) in length. It contains one coiled-coil domain (aa 166-248) that mediates multimerization, and a C-terminal fibrinogen-like domain (aa 275-495) that mediates receptor binding. Under reducing conditions, secreted monomeric Ang-2 is 65-66 kDa in size. Under nonreducing conditions, both natural and recombinant Ang-2 form 140 kDa dimers, 200 kDa trimers, and 250-300 kDa tetramers and pentamers. Alternate splicing generates a short isoform that lacks 52 amino acids (aa) preceding the coiled-coil domain. Mature human Ang-2 shares 86% aa sequence identity with mouse and rat Ang-2. Ang-2 is widely expressed during development, but it is restricted postnatally to highly angiogenic tissues such as the placenta, ovaries, and uterus. It is particularly abundant in vascular endothelial cells (EC) where it is stored in intracellular Weibel-Palade bodies. Both Ang-2 and the related Angiopoietin-1 (Ang-1) are ligands for the receptor tyrosine kinase Tie-2. While Ang-1 is a potent Tie-2 agonist, Ang-2 may act as either a Tie-2 antagonist or agonist, depending upon its state of multimerization. The higher the order of oligomer, the more effective Ang-2 becomes as a Tie-2 agonist. The short isoform appears to block the binding of either Ang-1 or full-length Ang-2 to Tie-2. Ang-2 functions as a pro-angiogenic factor, although it can also induce EC death and vessel regression. Upon its release from quiescent EC, it regulates vascular remodeling by promoting EC survival, proliferation, and migration and destabilizing the interaction between EC and perivascular cells. Ang-2 is required for postnatal vascular remodeling, and it cooperates with Ang-1 during lymphatic vessel development. It mediates the upregulation of ICAM-1 and VCAM-1 on EC, which facilitates the adhesion of leukocytes during inflammation. Ang-2 is upregulated in both the endothelium and tumor cells of several cancers as well as in ischemic tissue. Its direct interaction with Integrins promotes tumor cell invasion. Ang-2 also promotes the neuronal differentiation and migration of subventricular zone progenitor cells.

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Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 **Canada** TEL 855 668 8722 **China** TEL +86 (21) 52380373
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