

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Angiopoietin-2 in direct ELISAs and Western blots. In direct ELISAs and Western blots, less than 5% cross-reactivity with recombinant human Angiopoietin-X and recombinant mouse Angiopoietin-3 is observed.
Source	Polyclonal Goat IgG
Purification	Protein A or G purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Angiopoietin-2 Asp68-Phe496 and Tyr19-Phe496 Accession # O15123
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

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	Recombinant Human Angiopoietin-2 (Catalog # 623-AN)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 1 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. <ul style="list-style-type: none"> 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 (1, 2). 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 (3–6). Alternate splicing generates a short isoform that lacks 52 amino acids (aa) preceding the coiled-coil domain (4). 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 (3). It is particularly abundant in vascular endothelial cells (EC) where it is stored in intracellular Weibel-Palade bodies (1, 3, 7). Both Ang-2 and the related Angiopoietin-1 (Ang-1) are ligands for the receptor tyrosine kinase Tie-2 (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 (3, 8–11). The short isoform appears to block the binding of either Ang-1 or full-length Ang-2 to Tie-2 (4). Ang-2 functions as a pro-angiogenic factor, although it can also induce EC death and vessel regression (12, 13). 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 (8, 13, 14). Ang-2 is required for postnatal vascular remodeling, and it cooperates with Ang-1 during lymphatic vessel development (7, 15). It mediates the upregulation of ICAM-1 and VCAM-1 on EC, which facilitates the adhesion of leukocytes during inflammation (16). Ang-2 is upregulated in both the endothelium and tumor cells of several cancers as well as in ischemic tissue (17–20). Its direct interaction with Integrins promotes tumor cell invasion (21, 22). Ang-2 also promotes the neuronal differentiation and migration of subventricular zone progenitor cells (20).

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