

Active Recombinant Human ANGPT2 Protein, His-tagged, Biotinylated

Cat. No. ANGPT2-158H **Lot. No.** (See product label)

SPECIFICATION

Product Overview

Recombinant Human ANGPT2(Tyr19-Phe496) fused with His tag at C-terminal was expressed in NS0, Biotinylated.

Species

Human

Source

Mammalian Cells

ProteinLength

Tyr19-Phe496

Description

Angiopoietin-2 (Ang-2; also ANGPT2) is a secreted glycoprotein that plays a complex role in angiogenesis and inflammation. Mature human 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 non-reducing conditions, both natural and recombinant Ang-2 form 140 kDa dimers, 200 kDa trimers, and 250-300 kDa tetramers and pentamers. Alternative 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-

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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 up-regulation of ICAM-1 and VCAM-1 on EC, which facilitates the adhesion of leukocytes during inflammation. Ang-2 is up-regulated 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.

Predicted N Terminal Tyr19

Form Lyophilized from a 0.2 µm filtered solution in MOPS, NaCl, CHAPS and PEG with BSA as a carrier protein.

Bio-activity Measured by its ability to activate Tie-2 in C6 rat glial cells transfected with human Tie-2. 0.2 µg/mL of Biotinylated Recombinant Human Angiopoietin-2 significantly induces phosphorylation of human Tie-2.

Molecular Mass 56 kDa (unlabeled)

Endotoxin <0.10 EU per 1 µg of the protein by the LAL method.

Purity >95%, by SDS-PAGE with silver staining

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Notes	Structure / Form: Oligomer, biotinylated via sugar residues
Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. 12 months from date of receipt, -20 to -70 centigrade as supplied. 1 month, 2 to 8 centigrade under sterile conditions after reconstitution. 3 months, -20 to -70 centigrade under sterile
Reconstitution	Reconstitute at 100 µg/mL in PBS.
Conjugation	Biotin

GENE INFORMATION

Gene Name	ANGPT2 angiopoietin 2 [Homo sapiens]
Official Symbol	ANGPT2
Synonyms	ANGPT2; angiopoietin 2; angiopoietin-2; Ang2; ANG-2; Tie2-ligand; angiopoietin-2B; angiopoietin-2a; ANG2; AGPT2;
Gene ID	285
mRNA Refseq	NM_001118887
Protein Refseq	NP_001112359
MIM	601922
UniProt ID	O15123

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