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## Recombinant Human Angiopoietin-2

**Description:** Human Angiopoietin-2 (Ang-2), a 66 kDa protein consisting of 476 amino acid residues (N21-F496), is fused to a N-terminal myc-tag and produced in insect cells.

The angiopoietin (Ang) family of growth factors includes four members, all of which bind to the endothelial receptor tyrosine kinase Tie2. Two of the Angs, Ang-1 and Ang-4, activate the Tie2 receptor, whereas Ang-2 and Ang-3 inhibit Ang-1-induced Tie2 phosphorylation. Angiopoietin-1 (Ang-1) is a secreted growth factor which binds to and activates the Tie-2 receptor tyrosine kinase. The factor enhances endothelial cell survival and capillary morphogenesis, and also limits capillary permeability. Ang-2 binds the same receptor but fails to activate it: hence, it is a natural inhibitor of Ang-1. Ang-2 destabilises capillary integrity, facilitating sprouting when ambient vascular endothelial growth factor (VEGF) levels are high, but causing vessel regression when VEGF levels are low. Tie-1 is a Tie-2 homologue but its ligands are unknown. Angiopoietin and Tie genes are expressed in the mammalian metanephros, the precursor of the adult kidney, where they may play a role in endothelial precursor growth. Tie-1-expressing cells can be detected in the metanephros when it first forms and, based on transplantation experiments, these precursors contribute to the generation of glomerular capillaries. During glomerular maturation, podocyte-derived Ang-1 and mesangial-cell-derived Ang-2 may affect growth of nascent capillaries. After birth, vasa rectae acquire their mature configuration and Ang-2 expressed by descending limbs of loops of Henle would be well placed to affect the growth of this medullary microcirculation. Finally, preliminary data implicate angiopoietins in deregulated vessel growth in Wilms' kidney tumours and in vascular remodelling after nephrotoxicity. Altogether, existing data suggest that VEGF-A and Angiopoietins not only have quite different roles during vascular development, but also very complementary and coordinated roles.

<b>Source:</b>	Insect cells
<b>Molecular Weight:</b>	66 kDa
<b>Purity:</b>	> 95%, by SDS-PAGE and visualised by silver stain
<b>Endotoxin level:</b>	< 0.1 ng per ug of Ang-2
<b>Stabilizer:</b>	BSA
<b>Buffer:</b>	TBS/0.05% CHAPS
<b>Formulation:</b>	lyophilised

**Biologically Activity:** The biological activity was determined by the induction of endothelial cell sprouting as described in Korff et al., 2001.

**Reconstitution:** The lyophilised Ang-2 is soluble in water and most aqueous buffers. The lyophilised Ang-2 should be reconstituted in PBS or medium containing at least 0.1% human or bovine serum albumin to a concentration not lower than 50 µg/ml.

**Stability:** Lyophilised samples are stable for greater than six months at -20°C to -70°C. Reconstituted Ang-2 should be stored in working aliquots at -20°C. **Avoid repeated freeze-thaw cycles!**

**Usage:** Ang-2 is offered for research use. Not for drug use. **Not for human use!**

**Catalogue number:** 300-049

**Size:** 5 µg

**Range:** 250 ng/ml

**Literature:** [Fiedler et al., J Biol Chem 278:1721, 2003; Korff et al., FASEB J 15:447, 2001; Tsigkos et al., Expert Opin Investig Drugs 12:933,2003; Koh et al., Exp Mol Med. 34:1, 2002]

**\*\* please note : always centrifuge vials before opening \*\***