

Recombinant Human Angiopoietin 1

Cat. No. ANGPT1-2518H Lot. No. (See product label)

SPECIFICATION

Species Human

Source Mammalian Cells

Description

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 destabilizes 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.

Analysis Note

The biological activity is measured by its ability to inhibit serum deprivation induced apoptosis in HUVE cells.

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Biochem/physiol Actions	Ang-1 is a ligand with affinity to the Tie-2 receptor tyrosine kinase, which is expressed in early hematopoietic and endothelial cells. Both Ang-1 and Tie-2 play critical roles in embryonic angiogenesis as well as adult vascular integrity.
Physical Form	Lyophilized from a 0.2 µm filtered solution in 50 mM Tris and 0.5 M sodium chloride, pH 6.5, containing 50 µg bovine serum albumin per 1 µg of cytokine.
Assay	≥90% (SDS-PAGE).
Storage Temp	-20°C.
Pathways	Hemostasis; Signaling in Immune system

GENE INFORMATION

Gene Name	ANGPT1 angiopoietin 1 [Homo sapiens]
Synonyms	ANGPT1; angiopoietin 1; AGP1; AGPT; ANG1; KIAA0003, Ang1; Angiopoietin-1; ANG-1
Gene ID	284
mRNA Refseq	NM_001146
Protein Refseq	NP_001137
MIM	601667
UniProt ID	Q15389
Chromosome	8q23.1

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Location

Function

receptor binding

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