

BACKGROUND

Angiopoietins belong to a distinct family of angiogenic proteins including Ang1-4, which have been shown to play fundamental physiological roles in maintenance of vascular integrity. Ang1 was identified as the major physiological ligand for Tie2 receptor tyrosine kinase, responsible for recruiting and sustaining periendothelial support cells. Ang2 was found to disrupt blood vessel formation in the developing embryo by antagonizing the effects of Ang1 and Tie2, and it was thus concluded that Ang2 represents a natural Ang1/Tie2 inhibitor. Extrapolation of these developmental findings to postnatal neovascularization has led to the dual inferences that Ang1 may induce maturation and stabilization of developing neovasculature, whereas Ang2 may cause destabilization required for additional sprout formation.¹ Ang1 binds to Tie2 and induces its activation via tyrosine phosphorylation. Through the phosphatidylinositol 3-kinase (PI3K)-Akt pathway and others, Ang1 exerts prosurvival, antipermeability, and anti-inflammatory effects on endothelial cells (ECs). However, it was demonstrated that the role of Ang-1 in angiogenesis and vascular permeability is secondary to increasing periendothelial support and vessel stabilization. Thus, Ang-1 could potentially serve as an antineoplastic or anti-permeability agent for patients with metastatic colorectal cancer.² Whereas, other studies suggested Ang-1 is a tumor angiogenesis promoter.³ Furthermore, it was demonstrated that Ang2 possesses both partial agonistic as well as antagonistic action on Tie2 in ECs—alone, Ang2 is a weak but necessary activator of Tie2, whereas in the presence of Ang1, Ang2 inhibits Tie2 signaling. Moreover, ECs secrete Ang2, which in turn maintains a basal level of Tie2 phosphorylation.⁴

References:

1. Maisonpierre, P.C. et al: Science 277:55-60, 1997
2. Stoeltzing, O. et al: Cancer Res. 63: 3370-7, 2003
3. Machein, M.R. et al: Am. J. Pathol. 165: 1557-70, 2004
4. Yuan, H.T. et al: Mol. Cell. Biol. 29:2011-22, 2009

TECHNICAL INFORMATION

Source:

Ang-2 Antibody is a rabbit antibody raised against a short peptide from human Ang-2 sequence.

Specificity and Sensitivity:

This antibody detects endogenous levels of Ang-2 proteins without cross-reactivity with other family members.

Storage Buffer: PBS and 30% glycerol

Storage:

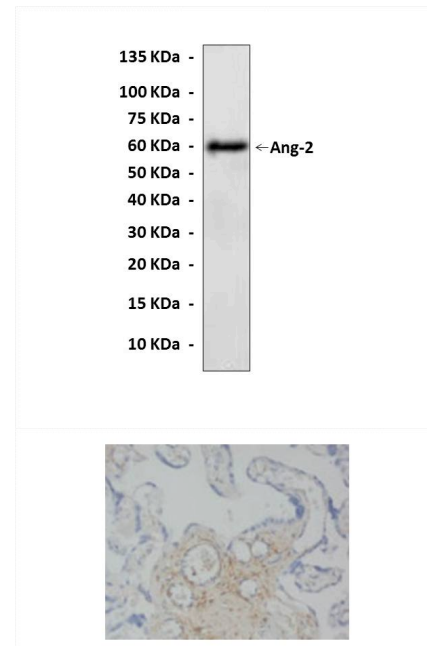
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

Application:	*Dilution:
WB	1:1000
IP	n/d
IHC	1:50-200
ICC	n/d
FACS	n/d

*Optimal dilutions must be determined by end user.

QUALITY CONTROL DATA



Top: Western Blot detection of Ang-2 proteins in rat brain tissue lysate using Ang-2 Antibody. **Bottom:** This antibody also stains paraffin-embedded human placenta tissue in IHC analysis.

