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Human Endothelial Cells: Pre-Screened

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Description

Human Endothelial Cells: Pre-Screened for Angiogenesis & VEGF Signaling - The most commonly used human endothelial cells are Human Umbilical Vein Endothelial Cells, (HUVEC), Human Microvascular Endothelial Cells (HMVEC) and Human Aortic Endothelial Cells (HAOEC). At Cell Applications, select lots of HUVEC, HMVEC, and HAOEC have been pre-screened to demonstrate stimulation-dependent angiogenesis and key endothelial cell signaling pathways (phosphorylation of VEGFR, Akt, MAPK, and expression of Tie2, eNOS, Axl and Etk/Bmx. Other cell types can be pre-screened by customer request.

VEGF-Stimulated Signaling in Pre-Screened Endothelial Cells -VEGF receptor-2 (VEGFR-2) is a major VEGF of endothelial cells. VEGFR-2-mediated signaling plays a critical role in angiogenesis, including regulation of proliferation, differentiation, cell movement, and survival of endothelial cells. VEGF-induced receptor dimerization triggers activation of VEGFR-2 tyrosine kinase and autophosphorylation at a specific set of tyrosine residues, which serve as docking sites for downstream signaling components leading to activation of downstream signaling molecules, including phosphorylation of Akt and p44/42-MAPK.

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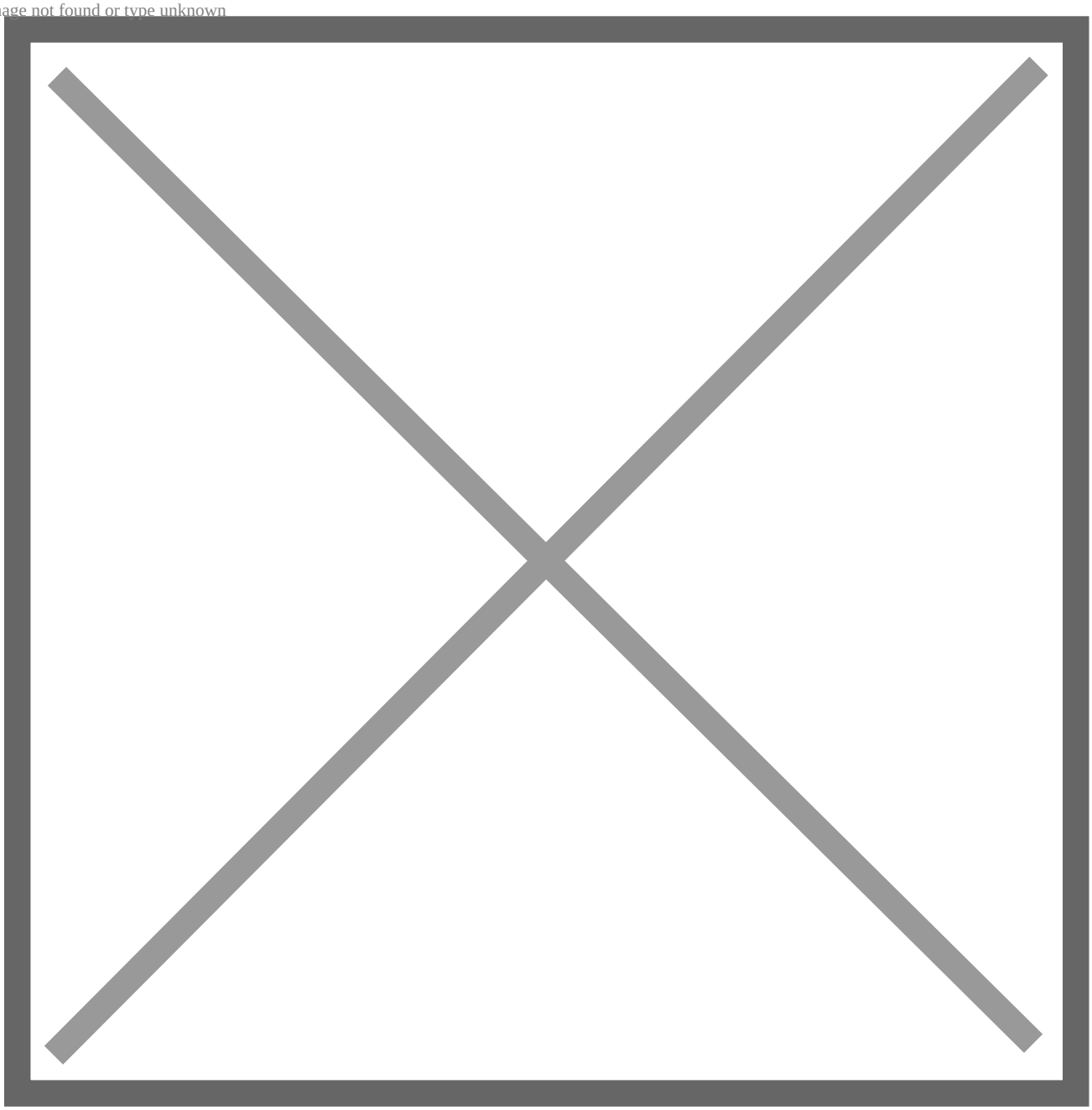

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(Click to Enlarge) **Pre-Screened Endothelial Cells** Top: Activation of VEGFR-2 signaling in HAOEC, HUVEC and HMVEC by 100 ng/ml VEGF for 0, 5 or 15 minutes. VEGFR-2 autophosphorylation probed w/ phospho-VEGFR-2 (Y1175) specific Ab, Akt activation detected by phospho-Akt (S473) specific antibody, and MAP kinase activation detected using phospho-p44/42 MAP kinase (T202/Y204) Ab. Bottom: Pre-screened HUVEC & HMVEC express key endothelial markers Tie2, eNOS, Axl and Etk/Bmx.

Details

Expression of Signaling Biomarkers in Pre-Screened Endothelial Cells. Prescreened Endothelial

Cells from Cell Applications, Inc. express the following important biomarkers:

- **Tie2**, a receptor tyrosine kinase critical for the angiogenic remodeling, sprout formation, survival of endothelial cells and vessel stabilization processes
- **eNOS** (endothelial Nitric Oxide Synthase), the enzyme that producse NO which is an important signaling molecule that regulates a diverse range of physiological events and is required for normal endothelial function
- **Axl**, a receptor tyrosine kinase whose ligand is the survival factor Gas6 (growth arrest-specific gene 6 product), is implicated in cell survival, leukocyte transmigration and neointima formation
- **Etk/Bmx** (Endothelial/epithelial Tyrosine Kinase), a member of the Btk family, participates in signal transduction stimulated by growth factor receptors, cytokine receptors, G-protein-coupled receptors, antigen receptors, and integrins, and has been implicated in cell adhesion, migration, proliferation and survival.

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