

Angiogenesis, the process of new capillary growth, requires endothelial cell activation in response to growth factors or mechanical stimuli. In skeletal muscle, prolonged increases in blood flow are known to induce new capillary growth. We investigated the signal mechanisms that contribute to blood flow-induced angiogenesis. Using a combination of cell culture and in vivo studies, we demonstrated that elevated blood flow activated the p38 MAPK signal pathway, leading to production of vascular endothelial growth factor. Inhibition of p38 MAPK abolished the blood flow-induced capillary growth, demonstrating the importance of this signal pathway in regulating capillary growth.

Reference: Gee E, Milkiewicz M, **Haas TL**. p38 MAPK activity is stimulated by vascular endothelial growth factor receptor 2 activation and is essential for shear stress-induced angiogenesis. *Cell Physiol.* 2010 Jan;222(1):120-6.

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