Effects of THP-1 Macrophage Conditioned Media on the Growth of Human Umbilical Vein Endothelial Cells

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Endothelial Cells form blood vessels, so knowing of how Macrophages and Endothelial Cells interact can be beneficial in finding therapies for diseases such as Cardiovascular disease, atherosclerosis, and strokes. For this reason, I have examined the effects of M0, M1, and M2 Macrophages with HUVECs on Vessel growth. Since M1s are known to clear cellular debris in an inflamed area and alert for the recruitment of M2 macrophages which promote tissue repair and wound healing, the study is critical. It was hypothesized that M0 and M1 Macrophages would not enhance the proliferation of Endothelial Vessel Growth, and it was also hypothesized that M2 Macrophages would enhance cell proliferation of Endothelial Vessels because M2 macrophages are regulators of tissue repair and wound healing. In the end, only M2 conditioned media had a positive change, meaning more vessels were produced, increasing vessel growth. After 24 hrs, HUVEC Vessels found in the M2 Conditioned media had the most segments; no significant difference came about by hour 48. After 24hrs, HUVEC vessels found in the M1 Conditioned media had the highest diameter lengths. My hypothesis was supported; M2 Conditioned media creates the most vessel growth due to increase in length density and segment proliferation.

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