**SERP-1 AND SERP-2, VIRAL ANTI-INFLAMMATORY PROTEINS, MODULATE SIGNALING IN HUMAN MONOCYTES**

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Atherosclerosis is characterized by chronic inflammation which initiates plaque growth and thrombotic occlusion. Serine protease inhibitors, or serpins, regulate the inflammatory, thrombotic and thrombolytic pathways driving atherosclerosis and vasculitis. The myxoma pox virus encodes viral serpins that subdue the host’s immune reaction; Serp-1, which significantly reduces inflammatory cell activation, invasion and plaque growth in animal models, and the cross-class serpin, Serp-2, which reduces inflammation and apoptosis in a variety of animal models. However, the signaling pathways targeted by these serpins are currently unknown. This study assesses the effects of Serp-1 and Serp-2 on gene expression changes regulating cell signaling in human monocytes. At 30 minutes, treatment with two anti-inflammatory viral serpins elicited significant changes for 4 genes involved in cell signaling pathways of human monocytic cells when compared to cells treated with saline. Consensus genes between the treatments target disparate signaling pathways, underlining the multifaceted nature of serpins. VCAM1 showed significant up regulation by both Serp-1 (P = 0.0214) and Serp-2 (P = 0.0002) whereas WNT2 is down regulated by both treatments (P < 0.0001). SELE was up regulated by Serp-2 (P = 0.0100) and Serp-1 (P = 0.0195), as was CD5 (Serp-1; P = 0.0009, Serp-2; P < 0.0001). Altering local clot formation/dissolution, leukocyte migration and apoptosis in immune cells represents a new potential therapeutic target for inflammatory vascular diseases.