

Identification of Targets for siRNA in Human Vena Saphena

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Abstract

Varicose veins (VVs) can be described as tortuous and dilated palpable veins more than 3 mm in diameter. They are one of the clinical presentations of chronic venous disorder (CVD). Despite significant progress in understanding the pathogenesis of VVs, the underlying mechanisms of VVs remain incompletely elucidated.[1] Monocyte chemoattractant protein-1 (MCP-1) and its receptor CCR2 are key mediators in vascular inflammation, acting as one of the most potent chemotactic agents to monocytes.[2] In our preliminary investigations, we utilized RT-qPCR to assess TNF- α , VCAM, and MCP-1 gene expression levels in a subset of samples. Based on these results and supporting studies, we have decided to focus on MCP-1 for further investigation. Our study aims to investigate the expression patterns of MCP-1, in control subjects and patients with varicose veins by quantifying mRNA levels. Additionally, we will examine the correlation between blood MCP-1 concentrations and tissue-specific chemokine expression to gain insights into the systemic versus localized inflammatory response in VV patients. We tend to also investigate the potential for therapeutic intervention by using gene silencing techniques like siRNA encapsulated within exosomes to inhibit MCP-1 expression specifically. An approach that holds promise for reducing leukocyte recruitment, granting a novel strategy to mitigate the pathogenesis of inflammatory vascular diseases which include VVs. By targeting MCP-1 with siRNA, this study aims to introduce a novel molecular-based therapy for varicose veins. This could reduce inflammation and disease progression, offering a minimally invasive treatment for patients suffering from chronic venous insufficiency.

Acknowledgments: We express our sincere gratitude for the funding provided by the European Commission under the project titled “Nanoparticles in Environment and Medical Research” (NanoKos - 438247).

References

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