

## **EXPRESSION OF VEGF-D AND THE SELECTED PROTEINS IN ENDOTHELIAL CELLS TRANSFECTED WITH ADENOVIRUS CARRYING VEGF-D**

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The family of Vascular Endothelial Growth Factors (VEGF) plays a key role in physiological and pathological angiogenesis. Here belongs VEGF-D which predominantly is known as a prolymphogenic factor. However, it interacts with both VEGFR-2 and VEGFR-3 on vascular endothelial cells, indicating that it may also have a proangiogenic activity.

In this report we used adenoviral gene transfer to investigate how VEGF-D could influence expression of selected proteins of Human Umbilical Vein Endothelial Cells (HUVECs). A gene of the mature form of VEGF-D in adenovirus vector (Ad-VEGF-D $\Delta$ N $\Delta$ C) was introduced into HUVECs. To examine if VEGF-D is expressed in HUVECs after transduction with Ad-VEGF-D $\Delta$ N $\Delta$ C, it was quantitated by real time PCR, Western Blotting and ELISA. These methods were also used to determine the influence of Ad-VEGF-D $\Delta$ N $\Delta$ C on the selected proteins essential in the early stages of angiogenesis. We examined also the level of expression of some endothelial cells receptors after transduction with Ad-VEGF-D $\Delta$ N $\Delta$ C using Flow Cytometry.

We observed increase of VEGF-D mRNA level after 8 hours from the beginning of transduction in comparison to nontransfected cells and higher level of this protein in cell lysates and supernatants after 24 h. Changes in the levels of PAI-1,  $\beta$ -1 intergrin, u-PAR and MMPs were also observed. Among 20 endothelial surface receptors there were 13 which expression was increased in 12 proteins which expression was decreased after transduction with Ad-VEGF-D $\Delta$ N $\Delta$ C.

These data show that adenovirus-derived VEGF-D has an influence on the synthesis of some of proteins engaged in early stages of angiogenesis and on the some surface receptors characteristic for HUVEC.