

EFFECT OF DisBa-01, A RECOMBINANT RGD-DISINTEGRIN FROM *Bothrops alternatus*, ON THE EXPRESSION OF VEGF RECEPTORS IN HUMAN ENDOTHELIAL CELLS

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Disintegrins are small peptides with an RGD motif derived from viperidae snake venoms. DisBa-01, a recombinant RGD-disintegrin from *Bothrops alternatus* snake venom, inhibits human microvascular endothelial cell (HMEC-1) proliferation. Interactions between vascular endothelial growth factor (VEGF) and its receptors VEGFR-1 and -2 are critical for endothelial cell proliferation. This process is dependent on VEGFR-2 activation, while VEGFR-1 has a negative regulatory function. This work aimed to analyze the effect of DisBa-01 on the expression of VEGFR-1 and -2 in human umbilical vascular endothelial cells (HUVECs) by real-time PCR. HUVECs were incubated with soluble DisBa-01 (1, 10, 100nM) for 4, 24, and 48h. PCR was accomplished based on the detection of SYBR® Green. Results were normalized to the β -actin gene and the comparative expression was calculated by $\Delta\Delta C_t$ method. All samples were performed in duplicate. VEGFR-1 levels were increased in cells treated with DisBa-01 in a time- and concentration-dependent way. Receptor expression levels were not significantly different from the controls at other conditions. These results suggest that the inhibition of endothelial cells proliferation by DisBa-01 may involve down-regulation of VEGFR-2 and up-regulation of the decoy receptor VEGFR-1.

Keywords: RGD-disintegrin, endothelial cell proliferation, VEGFR expression.

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