A PIVOTAL ROLE OF NITRIC OXIDE IN ENDOTHELIAL CELL DYSFUNCTION

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The functional role of the vascular endothelium is a subject of growing interest and appreciation. Some of the key functions of the endothelium are modulated by the activity and expression of endothelial nitric oxide synthase (eNOS), suggesting a role for this enzyme in endothelial dysfunction. Several well-known angiogenic stimulators exert their effect only in the presence of the functional eNOS. In this setting NO production is responsible for the scalar podokinetic cell motility, which is a prerequisite for the acquisition of vectorial movement when guidance cues are applied. The mode of this NO action appears to lie in the accelerated turnover of focal adhesions through the process of activation/inactivation of protein tyrosine phosphatases. Localization of eNOS to the caveolar domains, in the proximity of clustered \( \beta \)1 integrins, provides an additional level of regulatory complexity through the modulation of caveolar dynamics and the state of caveolin oligomerization. Therefore, eNOS serves various important functions in the endothelium and is a putative target for therapeutic interventions.