NITROLINOLEATE INFLUENCES ENDOTHELIAL CELL MIGRATION AND ANGIOGENESIS *IN VITRO*

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Background: Nitrolinoleate (LNO_2), a nitroalkene derivative of linoleic acid that belongs to a new class of lipid mediators, has been demonstrated to donate nitric oxide ($^{\bullet}NO$) and to posses a role in cell signaling. Since neovascularization has been suggested as a causative factor for atherosclerotic plaque growth and destabilization, and $^{\bullet}NO$ donors have been shown to regulate angiogenesis, the objective of the present study was to examine the effects of LNO_2 on angiogenesis *in vitro*. **Methods**: Angiogenesis was evaluated by measuring proliferation and cell migration of human umbilical endothelial cell (HUVEC) and endothelial cell sprouting by the rat aortic ring assay. **Results**: No effect of the LNO_2 on the endothelial cell proliferation (1-10 uM) was observed. However, HUVEC migration was significantly induced by LNO_2 (1-10 uM), whereas LNO_2 at 10 uM augmented endothelial cell sprouting from rat aortic rings. Interestingly, equimolar doses of its precursor, the linoleic acid, showed no effect on endothelial cell migration. Furthermore, the LNO_2 effects on endothelial cell migration was significantly prevented by a $^{\bullet}NO$ scavenger pretreatment [2-(4-carboxyphenyl)-4,4,5,5-tetramethylimidazoline-1-oxyl-3-oxide (carboxy PTIO, 100 uM)]. **Co*n*clusions**: Our findings indicate that LNO_2 might regulate endothelial cell migration by a $^{\bullet}NO$-dependent mechanism, and that this lipid mediator may have a major role in the neoangiogenesis process. **Financial Support:** FAPESP, CNPQ/INSTITUTO do MILÊNIO REDOXOMA