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Age-related Differences in Expression of Vascular Endothelial Growth Factor by Periodontal Ligament Cells *In Vitro*

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Abstract: The purpose of this study was to evaluate age-related differences in expression of vascular endothelial growth factor (VEGF) by periodontal ligament (PDL) cells. PDL cells were obtained from Wistar male rats weighing approximately 150g each in the young group and 350g each in the old group. PDL cells derived from upper and lower incisors were seeded in 35-mm culture dishes after primary culture. For cell proliferation assays, cells were detached and counted at 1, 3, 5, 7, 11 and 14 days after culture. VEGF mRNA expression was analyzed with TaqMan[®]. The number of cells in both groups increased day by day, but the rate of increase in the young group was higher than that in the old group. VEGF mRNA expression in the young group increased from 3 to 14 days, but in the old group increased only slightly over the same time period. Expression ratios in the young group were higher than those in the old group, and there were significant differences between the young and old groups at 7 and 14 days of culture. In conclusion, the data revealed that PDL cells varied with age, and suggest that in view of such changes in cell proliferation and VEGF mRNA expression, age should be taken into consideration in periodontal treatment.

Key words: [Aging](#), [VEGF](#), [Periodontal ligament](#), [In vitro](#)

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