

## EFFECT OF COLCHICINE FOR DNA SYNTHESIS AND EXPRESSION ON VASCULAR SMOOTH MUSCLE CELL BY PLATELET-DERIVED GROWTH FACTOR-BB

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### ABSTRACT

Vascular smooth muscle cell (VSMC) migration is regulated by a variety of factors. In this study, we investigated the effect of colchicine on the effect of colchicine on vascular smooth muscle cell DNA synthesis and proliferating cell nuclear antigen (PCNA) Expression by PDGF-BB. In order to determine the degree of DNA synthesis, vascular smooth muscle cells were plated on a 24-well culture plate and 70% confluence was applied, and colchicine (0.001 to 10  $\mu$ M) was administered after 24 hours. PDGF (Platelet-derived growth factor (PDGF)-BB increased significantly the amount of DNA synthesis in vascular smooth muscle cells than in the control group. As colchicine concentrations were increased to 0.1, 1.0, and 10  $\mu$ M, DNA synthesis was inhibited to 31.8, 48.4, and 56.0%, respectively. Among ERK (Extracellularly Regulated Kinase)1/2, Akt, and p38 MAPK (Mitogen Activated Protein Kinase) in the case of colchicine treatment, p38 MAPK showed a significant decrease in phosphorylation as the concentration of colchicine increased. The colchicine proliferation inhibitory effect was due to blocking of the p38 MAPK pathway and did not affect ERK1/2 and Akt pathway.

**Keywords:** colchicine, DNA synthesis, Mitogen activated protein kinase (MARK), Platelet-derived growth factor (PDGF)-BB.