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## **Hypotensive, hypolipidemic, and vascular protective effects of *Morus alba* L. in rats fed an atherogenic diet.**

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Source : Professional Graduate School of Oriental Medicine, Wonkwang University, Jeonbuk, 570-749, Republic of Korea.

### **Abstract**

*Morus alba* L. has been used in traditional Chinese medicine and almost all parts of this plant are useful in cardiovascular, liver and spleen disorders. The present study was designed to investigate the inhibitory effect of a water extract from *Morus alba* L. (WMA) on vascular dysfunction in rat models fed a high fat and high cholesterol diet. Male rats were fed an atherogenic diet consisting of food with 7.5% cocoa butter and 1.25% cholesterol, with or without 100 or 200 mg/day/kg WMA, for 14 weeks. Chronic treatment with low (100 mg/kg/day) or high (200 mg/day/kg) doses of WMA markedly attenuated hypertension and the impairments of acetylcholine-induced relaxation of aortic rings in rats fed an atherogenic diet. WMA reduced intima/media thickness in rats fed an atherogenic diet. WMA improved plasma levels of triglyceride (TG) and augmented plasma levels of high-density lipoprotein (HDL) and plasma low-density lipoprotein (LDL), but did not affect blood glucose levels. Interestingly, WMA suppressed increased cell adhesion molecules such as E-selectin, vascular cell adhesion molecule-1 (VCAM-1), and intracellular adhesion molecule-1 (ICAM-1) expression in the aorta. Taken together, these results suggested that *Morus alba* L. could improve an atherogenic diet-induced hypertension, hyperlipidemia, and vascular dysfunction through inhibition of cell adhesion molecules expression and induction of vascular relaxation.

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**Polyphenol-rich extract from mulberry leaf inhibits vascular smooth muscle cell proliferation involving upregulation of p53 and inhibition of cyclin-dependent kinase.**

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Source :Department of Internal Medicine, Chung Shan Medical University Hospital, School of Medicine.

**Abstract**

This study was carried out to investigate the impact of polyphenol-rich extract from mulberry leaf on the proliferation of vascular smooth muscle cell (VSMC) and verify its mechanism in vitro. VSMC proliferation is an important pathophysiological process in the development of atherosclerosis, which is the major cause of coronary artery disease (CAD). Polyphenol-rich foods, such as mulberry leaf, have been reported to reduce the risk of CAD. The effect of mulberry leaf extract (MLE) on cell growth was measured by a growth curve assay, on distribution of cells in the cell cycle by flow cytometry, and on cyclin-dependent kinase (CDK) activity and cell-cycle regulatory proteins by Western blot, immunoblotting, and immunoprecipitation analyses. The results showed that MLE induced phosphorylation of p53, promoted expression of p21 and p27, decreased CDK2/4 activity, inhibited phosphorylation of Rb, and thereby blocked the G1 to S transition in the cell cycle.