

Vulgarenol, a Sesquiterpene Isolated from *Magnolia grandiflora*, Induces Nitric Oxide Synthases II and III Overexpression in Guinea Pig Hearts

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Vulgarenol, a sesquiterpene isolated from *Magnolia grandiflora* flower petals, decreased coronary vascular resistance in the Langendorff isolated and perfused heart model, when compared to the control group [$(15.2 \times 10^7 \pm 1.0 \times 10^7)$ dyn s cm⁻⁵ vs. $(36.8 \times 10^7 \pm 1.2 \times 10^7)$ dyn s cm⁻⁵]. Our data suggest that this coronary vasodilator effect probably involved inducible and endothelial nitric oxide synthase overexpression (6.8 and 4.2 times over control, respectively), which correlated with increases in nitric oxide release [(223 ± 9) pmol mL⁻¹ vs. (61 ± 11) pmol mL⁻¹] and in cyclic guanosine monophosphate production [(142 ± 8) pmol mg⁻¹ of tissue vs. (44 ± 10) pmol mg⁻¹ of tissue], as compared to control values. This effect was antagonized by 3 μ M gadolinium(III) chloride, 100 μ M *N*-nitro-L-arginine methyl ester, and 10 μ M 1*H*-[1,2,4]oxadiazolo[4,2-*a*]quinoxalin-1-one. Hence, the vulgarenol-elicited coronary vasodilator effect could be mediated by the nitric oxide-soluble guanylyl cyclase pathway.

Key words: *Magnolia grandiflora*, Coronary Vasodilator Activity, Nitric Oxide Synthases