Inhibition of vascular inflammatory responses by caffeoyl glucosides from *Nandina domestica*

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Endothelial dysfunction is a key pathological feature of vascular inflammatory responses and results in increased permeability (hyperpermeability) to fluids, adhesion of leukocytes to endothelial cells, and migration across the endothelium to the underlying tissue. In the present study, a new caffeoyl glucoside (1) and two known caffeoylated compounds (2 and 3) were isolated from the fruits of *Nandina domestica* Thunb. (Berberidaceae). The new compound 1, designated nandinaside A, was identified as 4-formylphenyl 6-O-[3-(3,4-dihydroxyphenyl)propenoyl]-β-D-glucopyranoside by spectroscopic analysis. Compounds 1–3 were investigated for their effects against lipopolysaccharide (LPS)-mediated endothelial inflammatory responses. At 20 µM, 1 and 2 inhibited LPS-induced hyperpermeability, adhesion, and migration of leukocytes across a human endothelial cell monolayer in a dose-dependent manner. Our findings suggest that caffeoyl glucosides 1 and 2 may serve as potential scaffolds for the development of therapeutic agents to treat vascular inflammatory disorders.

Keywords: caffeoyl glucosides, Nandina domestica, vascular inflammatory disorders