



## Advanced glycation inhibition and protection against endothelial dysfunction induced by coumarins and procyanidins from *Mammea neurophylla*.

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Advanced glycation end-products (AGEs) are associated with many pathogenic disorders such as pathogenesis of diabetes or endothelial dysfunction leading to cardiovascular events. Therefore, the identification of new anti-AGE molecules or extracts aims at preventing such pathologies. Many Clusiaceae and Calophyllaceae species are used in traditional medicines to treat arterial hypertension as well as diabetes. Focusing on these plant families, an anti-AGE plant screening allowed us to select *Mammea neurophylla* for further phytochemical and biological studies. Indeed, both DCM and MeOH stem bark extracts demonstrated in vitro their ability to prevent inflammation in endothelial cells and to reduce vasoconstriction. A bioguided fractionation of these extracts allowed us to point out 4-phenyl- and 4-(1-acetoxypropyl)coumarins and procyanidins as potent inhibitors of AGE formation, potentially preventing endothelial dysfunction. The fractionation steps also led to the isolation of two new compounds, namely neurophyllols A and B from the DCM bark extract together with thirteen known mammea A and E coumarins (mammea A/AA, mammea A/AB, mammea A/BA, mammea A/BB, mammea A/AA cycloD, mammea A/AB cycloD, disparinol B, mammea A/AB cycloE, ochrocarpin A, mammea A/AA cycloF, mammea A/AB cycloF, mammea E/BA, mammea E/BB) as well as  $\delta$ -tocotrienol, xanthenes (1-hydroxy-7-methoxyxanthone, 2-hydroxyxanthone) and triterpenes (friedelin and betulinic acid). During this study, R,S-asperphenamate, previously described from fungal origin was also purified.

Résumé en anglais

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