

Isolation and Structure Elucidation of New Metabolites from *Stachys ehrenbergii*

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The genus *Stachys* is one of the largest of the Lamiaceae (Labiatae) family and includes about 200-300 species, in the subtropical and tropical regions of both emispheres. The investigated species contain many kinds of secondary metabolites, mainly flavonoids, iridoids and terpenoids from the aerial parts and the roots. As a part of a program aimed to identify new acidic metabolites from plants of the genus *Stachys*, we investigated the aerial parts of *Stachys ehrenbergii* Boiss, a species native to Lebanon. Extensive chromatographic separation of the acetone extracts led to the isolation of new metabolites soluble in aqueous basic solution, thus containing acidic functional groups. Their structures and stereochemistry were elucidated using a combination of ¹³C and ¹H homo and heteronuclear 2D NMR experiments and mass analysis. One of these metabolites is the amide of a substituted glycolic acid with β -alanine. This appears to be a remarkable occurrence, as, to the best of our knowledge, the only other example of this kind of products in the plants is the well-known pantothenic acid (vitamin B5), the essential precursor to CoA. The development of an enantioselective synthesis of this molecule allowed to confirm the structure and assign the (*R*) absolute configuration at C-2' of the natural product. The second compound was found to be a biflavonol glycoside, identified as Chrysoeriol-7-O- β -D-glucuronopyranoside-(4'-O-4''')-chrysin-7'''-O- β -D-glucuronopyranoside.

