2-Phenolic-purines: synthesis and antioxidant activity

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Nowadays, antioxidants receive remarkable attention in the literature, due to the ability to preserve foodstuffs by retarding deterioration, rancidity and/or discoloration caused by oxidation.[1] In biological systems, antioxidants protect against oxidative damage and help to prevent cardiovascular, neurological and/or carcinogenic diseases.[2] Most of the antioxidants described in literature are natural products having phenolic units incorporated in the structure[3] and as far as we know purine derivatives were never described as antioxidants.
In order to obtain new compounds with antioxidant activity (fig. 1), we combined phenolic subunits with the purine nucleus. The antioxidant activity of the new compounds was assessed using DPPH assay and cyclic voltammetry and was compared with data obtained for Trolox, a commercial derivative of vitamin E routinely used as reference compound. The results obtained will be presented.

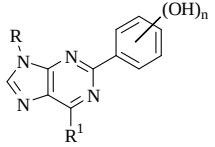

Figure 1

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References

[1] B. Saad, Y.Y. Sing, M.A. Nawi, N.H. Hashim, A.S.M. Ali, M.I Saleh, et al., Food Chemistry, 105 (2007) 389-394.
[2] a) S.A. Lanina, P. Toledo, S. Sampels, A. Kamal-Eldin, J.A Jastrebova, Journal of Chromatography A, 1157 (2007) 159-170. b) F.M.F. Roleira, C. Siquet, E. Orrù, E. M. Garrido, J. Garrido, N. Milhazes, G. Podda, F. Paiva-Martins, S. Reis, R.A. Carvalho, E.J.T. Silva, F. Borges, Bioorg. Med. Chem. 18 (2010) 5816–5825. c) J. G. Fernández-Bolaños, Ó. López, J. Fernández-Bolaños, G. Rodríguez- Gutiérrez, Curr. Org. Chem., 12 (2008) 442-463.
[3] S. Khadem, R.J. Marles, Molecules, 15 (2010) 7986-8005.