

# Accepted Manuscript

Synthesis and antioxidant evaluation of desmethylxanthohumol analogs and their dimers

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PII: S0223-5234(16)30754-1

DOI: [10.1016/j.ejmech.2016.09.024](https://doi.org/10.1016/j.ejmech.2016.09.024)

Reference: EJMECH 8890

To appear in: *European Journal of Medicinal Chemistry*

Received Date: 18 May 2016

Revised Date: 7 September 2016

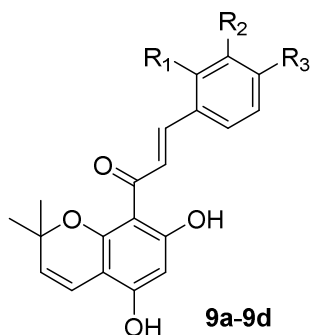
Accepted Date: 8 September 2016

Please cite this article as: Y. Teng, X. Li, K. Yang, X. Li, Z. Zhang, L. Wang, Z. Deng, B. Song, Z. Yan, Y. Zhang, K. Lu, P. Yu, Synthesis and antioxidant evaluation of desmethylxanthohumol analogs and their dimers, *European Journal of Medicinal Chemistry* (2016), doi: 10.1016/j.ejmech.2016.09.024.

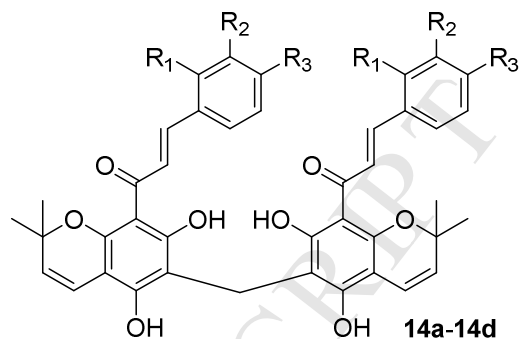
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## Graphical Abstract

Four ring-closing analogs of natural prenylated chalcone Desmethylxanthohumol (**1**) and their dimers were synthesized. The antioxidant activities of these new chalcone derivatives were evaluated in the PC12 cell model of hydrogen peroxide ( $H_2O_2$ )-induced oxidative damage.



$R_1 = H, OH, R_2 = H, OH, R_3 = H, OH$



$R_1 = H, OH, R_2 = H, OH, R_3 = H, OH$

The dimers show better antioxidant activity than the corresponding monomers

The most potent compound increased PC12 cell viability from 25% to 85% under 100  $\mu M$

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