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Synthesis and antioxidant evaluation of desmethylxanthohumol analogs and their dimers

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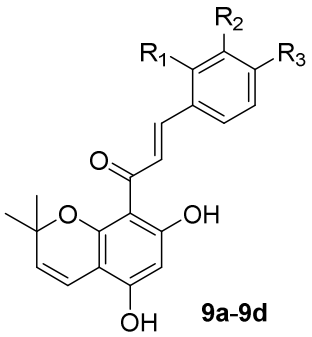
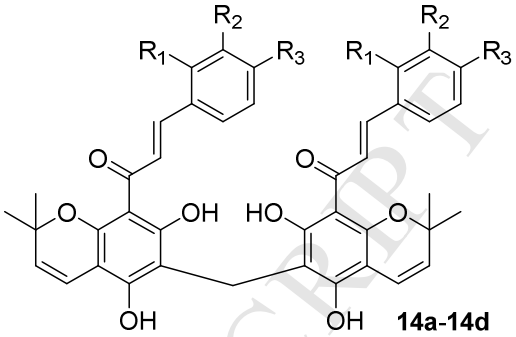
Graphical Abstract

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.



9a-9d

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



14a-14d

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 μM