Singlet Oxygen Quenching by Phenylamides and their Parent Compounds

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This paper demonstrates for the first time that plant metabolites of the phenylamide type, conjugates of putrescine with hydroxycinnamic acids (*p*-coumaric, caffeic and ferulic), possess $^1O_2$ quenching properties. Data were obtained confirming that their acidic parent compounds were also able to quench $^1O_2$, as did polyamines (putrescine, spermidine and spermine), and that this ability depends on the number of amino groups. Potentiation of the $^1O_2$ quenching ability of the conjugates relative to both parent components was established. The importance of polyamines and phenylamides in the plant non-enzymatic antioxidant defence at sites of intensive $^1O_2$ generation, such as the photosynthetic centers, was suggested.

Key words: Antioxidants, Hydroxycinnamic Polyamine Conjugates, Singlet Oxygen