Anticancer and Antioxidant Activity of Novel 5-Substituted- 2-ylidene-1,3-Thiazolidin-4-one Derivatives

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Abstract

Summary
Open and heterocyclic active methylene compounds were added to isothiocyanatobenzene, then, cyclized with (Z)-4-aryl-4-oxobut-2-enoic and/or 2-chloro
ethanoic acids, giving 5-(2-oxo-2-arylethyl)- and 1,3-thiazolidin-2-yliden-4-ones. Bromination of these two classes of products yielded their (E,Z)- 5-(2-oxo-2-arylethylidene)- and 5-bromo analogues, respectively. A methanolysis process has occurred at the ethyl derivatives, during purification with boiled methanol. On treatment
with alkali salts, the 5-bromo derivatives were dimerized, at C-5, but in diluted solutions,
it reacted with phenylmethanamine, providing the corresponding 5-benzylamino derivative. Reactions of 4-methoxybenzaldehyde with the 5-unsubstituted-1,3-thiazolidinone products gave their (E,Z) 5-(4-methoxybenzylidene) homologues. Structures of all products were established by spectroscopic data. The tested samples
showed interesting anticancer and antioxidant potential.