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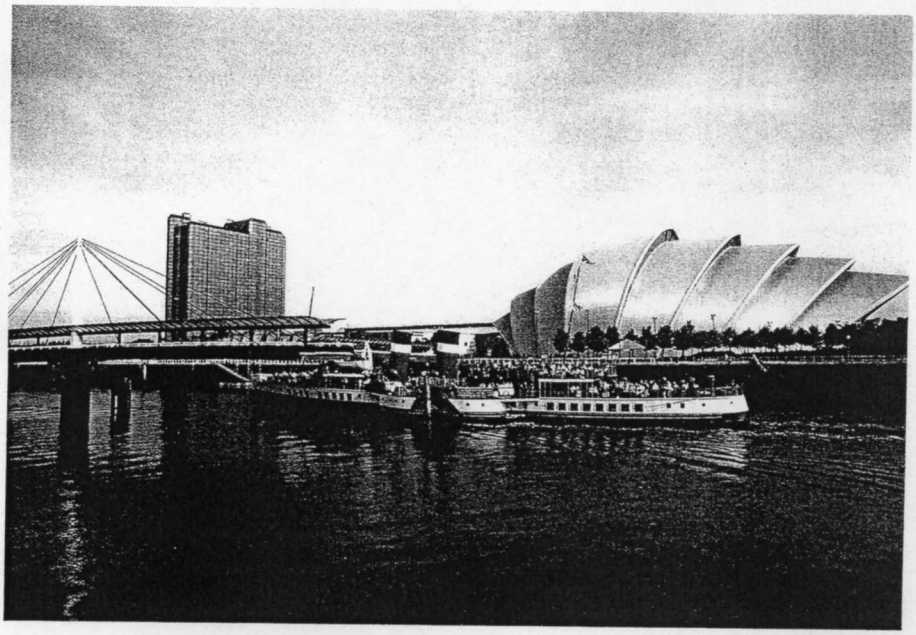

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2-Styryl 4*H*-3,1-Benzoxazin-4-ones and Quinazolin-4(3*H*)-ones – Potential Antioxidants

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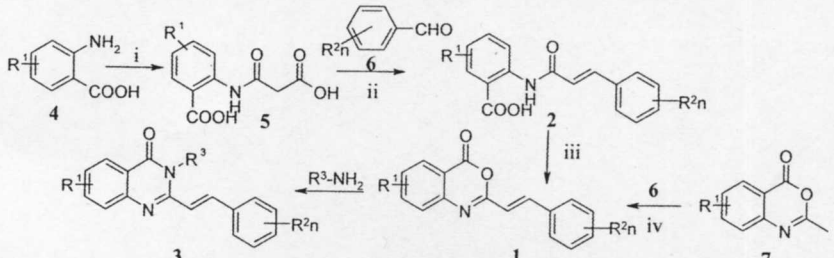
Several 4*H*-3,1-benzoxazin-4-ones and quinazolin-4(3*H*)-ones are known as natural antioxidants. 2-Styryl-4*H*-3,1-benzoxazin-4-ones (avenalumins) are cyclic analogues of N-cinnamoylanthranilates (avenanthramides) - alkaloids of oats exhibiting antioxidant activity.[1] Quinazolinone alkaloids containing anthranilic acid moiety or styryl fragment (e.g., antioxidant isaindigotone) have been recently described.[2]

This study was focused on the antiradical activity (detected by DPPH method) of benzoxazinones **1**, their precursors **2** and quinazolinones **3**.

Benzoxazinones **1** were synthesized by two methods: from substituted anthranilic acids **4** by known scheme[3] as well as by condensation of 2-methylbenzoxazinones **7** with aromatic aldehydes **6** in the presence of acid catalyst. The quinazolinones **3** were obtained from compounds **1** in reactions with variable primary amines. The advantages of ultrasonic treatment for the realization of these reactions have been examined.



(i) Meldrum's acid, toluene; (ii) β-alanine, Py; (iii) Ac_2O or PTSA, or $SOCl_2$; (iv) PTSA or Lewis acid
R^1 = H or OH; R^2 = OH, OMe or NMe_2; n = 1, 2 or 3

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References

(1) Mayama, S.; Tani T.; Ueno, T.; Hirabayashi, K.; Nakashima, T.; Fukami, H.; Mizuno, Y.; Irie, H. *Tetrahedron Lett.* **1981**, *22*, 2103.

(2) Mhaske, S. B.; Argade, N. P. *Tetrahedron* **2006**, *62*, 9787.

(3) Kamat, S. P.; Parab, S. J. *Indian J. Chem.* **2007**, *46B*, 2074.