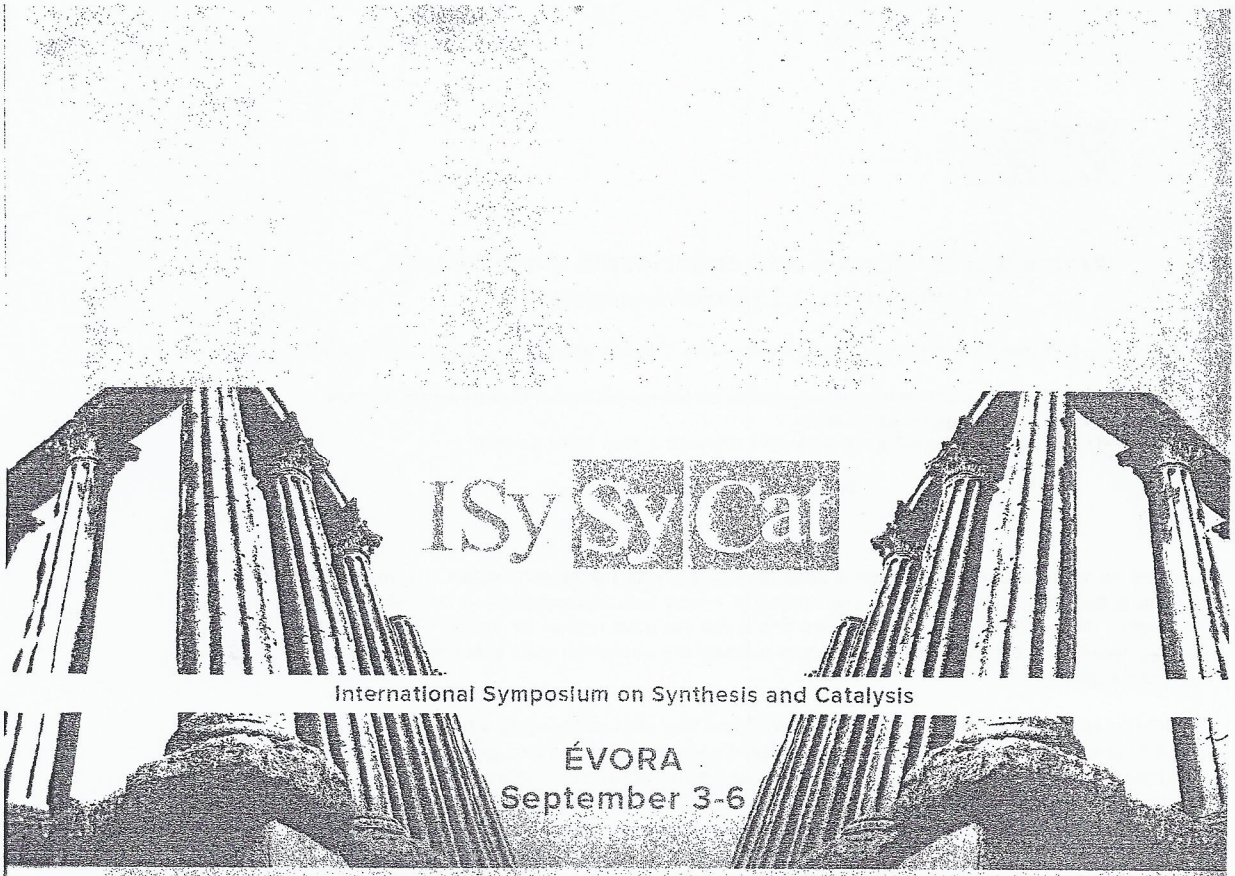

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New antioxidants containing several arylmethyl Meldrum`s acid moieties

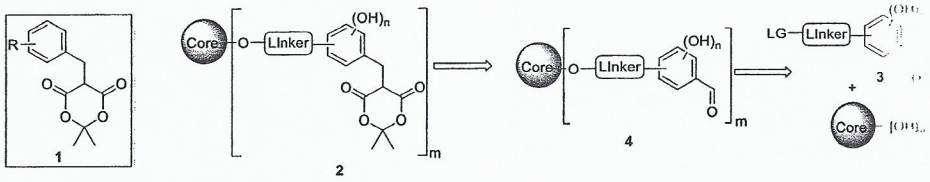
Inese Mierina,[a] Elina Zoltnere,[a] Klaudija Aispure,[a,b] Mara Jure[a]

[a] *Institute of Technology of Organic Chemistry, Faculty of Materials Science and Applied Chemistry, Riga Technical University, Str. P.Valdena 3/7, Riga, Latvia, LV 1048.*
[b] *Agenskalns State Gymnasium, Str. Lavizes 2A, Riga, Latvia, LV 1002*

Email: Inese.Mierina@rtu.lv

Arylmethyl Meldrum`s acids **1** are a novel type of excellent antioxidants.[1] Synthesis of dendrimeric structures is an attractive tool for improvement antiradical activity. Such approach has turned out successful e. g. for vanillin and syringaldehyde,[2] gallic acid[3] and *N*-phenyl carbazole[4] derivatives. Even more, dendrimer-type compounds are found among natural antioxidants (e. g., tannic acid[5]), as well as commercial antioxidant *Irganox 3114* contains a few phenolic units on the core,[6] too. Thus, inspired by these examples, antioxidants **2** containing several 1,3-dioxane-4,6-dione units as termini were synthesized and tested for their antiradical activity.

In order to obtain these structures, linear synthetic strategy (Scheme 1) was applied: the hydroxyl groups of the core were alkylated with compounds **3**, leading to corresponding aldehydes **4**. Later, the 1,3-dioxane-4,6-dione termini were added through the Knoevenagel condensation with Meldrum`s acid, and treatment of the obtained arylidene compounds with $NaBH_4$ gave target compounds **2**. The antiradical activity of these compounds **2** was analyzed by DPPH and GO tests. According to the preliminary results, although the presence of several active moieties did not ensure synergistic effect (or it was slight), in all cases the activity was at least proportional to the number of arylmethyl Meldrum`s acid moieties per molecule.



Scheme 1: Synthesis of target compounds **2**

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