NEW CHIRAL 2(5*H*)-FURANONE DERIVATIVES POSSESSING *L*-MENTHOL AND *S*-NAPROXEN MOIETIES

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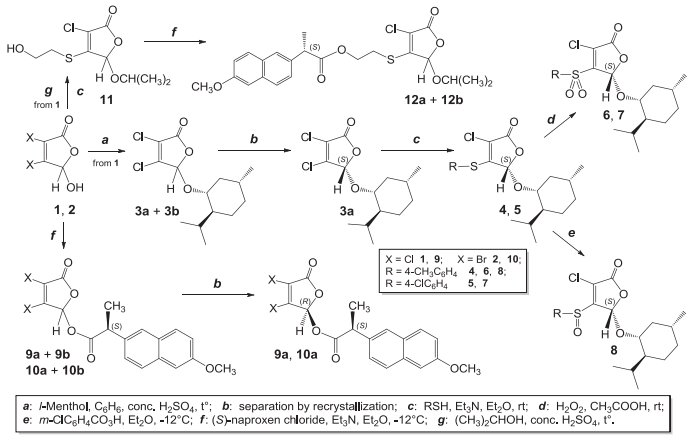
The 2(5*H*)-furanone subunit characterizes many naturally occurring and medicinally important compounds with diverse biological activities such as antifungal, antibacterial and antiinflammatory. Most biological molecules and pharmaceutical targets exist in enantiomerically pure form. In this study, the pharmacophore units of *l*-menthol and *S*-naproxen (a non-steroidal anti-inflammatory drug) as chiral auxiliaries were introduced into the lactone ring in order to obtain the optically pure 2(5*H*)-furanone derivatives. We have allowed mucohalic acids **1** and **2** to react with *l*-menthol and *S*-naproxen and isolated pure diastereomers **3a**, **9a** and **10a** from the obtained diastereomeric mixtures. Thiilation of furanone **3a** and subsequent oxidation reactions of thioethers **4**, **5** result in the formation of enantiomerically pure sulfones **6**, **7** and sulfoxide **8**. We have developed also the three-step synthesis of thioether **12** that combines both 2(5*H*)-furanone and *S*-naproxen moieties. Novel furanone based compounds have been characterized in detail by IR, NMR spectroscopy and single crystal X-ray diffraction.



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