

Synthesis of sugar-derived 2'- and 3'-substituted furans and their application in Diels-Alder reactions.

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Streszczenie

A convenient synthesis of 2'- and 3'-furyl sugars in which the furan and the sugar parts are directly connected is presented. The key step comprises HF·py-induced cyclization of α,β -unsaturated carbonyl compounds (ketones or aldehydes) possessing terminal hydroxymethylene groups protected as TBDPS ethers. Treatment of such furan derivatives with *N*-phenylmaleimide under high-pressure conditions (11 kbar) produces the corresponding [4+2] adducts, with the *endo* forms predominating. At $p = 1$ atm and $T = 20$ °C, however, the *exo* isomers are formed as the main products. The [4+2] adducts undergo retro Diels–Alder reactions at elevated temperatures at atmospheric pressure.

Adres publiczny

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