SYNTHESIS OF α,β-UNSATURATED CYCLOPENTENE-CARBOXYLATES. V. ATTEMPTED SYNTHESIS OF FUROPELARGONES

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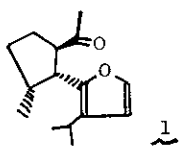
The reaction of 3-isopropyl-2-furylmagnesium bromide with 3-methyl-1-cyclopentenyl methyl ketone in the presence of cuprous chloride gave a mixture of two previously unreported diastereomers (3 and 4) of furopelargone A (1).[1]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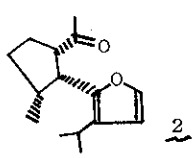
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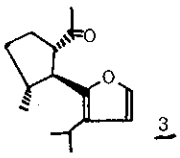
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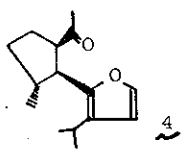
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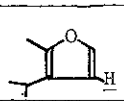
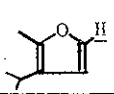
Structures of these diastereomers were elucidated by making a comparison of spectral data (IR, NMR) with those of furopelargones A and B[2,3], which were synthesized by the procedure reported by Büchi and Wüest. Upfield shift of the acetyl methyl protons of the epimer 4 strongly suggests its cis orientation as regards 3-isopropyl-2-furyl group. The trans orientation of the epimer 3 also can be deduced in like manner.

NMR Spectra of Furopelargones

					
Furopelargone A	0.70 (d, J=8Hz)	1.14 (d, J=11Hz)	1.98 (s)	6.17 (d, J=2Hz)	7.17 (d, J=2Hz)
Furopelargone B	0.73 (d, J=7 Hz)	1.16 (d, J=7Hz)	1.77 (s)	6.20 (d, J=2Hz)	7.23 (d, J=2Hz)
Epimer 3	0.92 (d, J=6Hz)	1.11 (d, J=7Hz)	1.89 (s)	6.10 (d, J=2Hz)	7.11 (d, J=2Hz)
Epimer 4	0.91 (d, J=6Hz)	1.17 (d, J=7Hz)	1.54 (s)	6.14 (d, J=2Hz)	7.12 (d, J=2Hz)

Literatures

(1) R. E. Wolff, J. C. N. Ma, and G. Lukas, Compt. rend., 257, 1784 (1963).

(2) G. Lukas, J. C. N. Ma, J. A. McCloskey, and R. E. Wolff, Tetrahedron, 20, 1789 (1964).

(3) G. Büchi and H. Wüest, J. Am. Chem. Soc., 87, 1589 (1965).