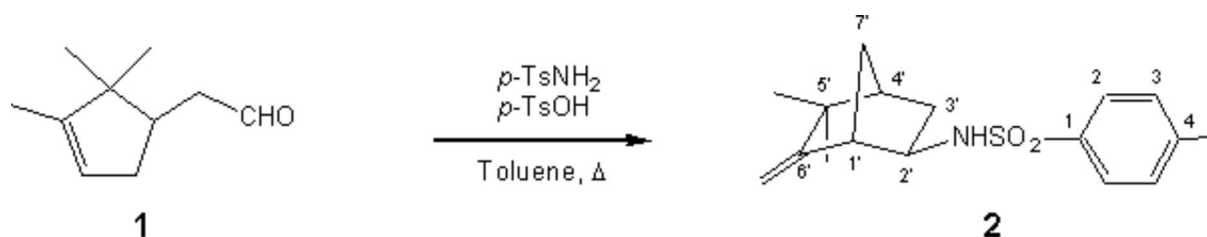


exo*-N-(5,5-Dimethyl-6-methylene-bicyclo[2.2.1]hept-2-yl)-4-methylbenzenesulfonamide*Concepción Badía, Juan M. Castro, Pablo J. Linares-Palomino, Sofía Salido, Joaquín Altarejos,* Manuel Nogueras and Adolfo Sánchez**

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Tel.: 34-953-002743, Fax: 34-953-012141, e-mail: jaltare@ujaen.es*Received: 16 February 2004 / Accepted: 7 June 2004 / Published: 1 July 2005***Keywords:** *a*-Campholenic aldehyde, acid-catalyzed rearrangement, intramolecular cyclization.

p-Toluenesulfonic acid (35 mg, 0.20 mmol) was added to a stirred mixture of campholenic aldehyde (**1**) (725 mg, 3.81 mmol) and *p*-toluenesulfonamide (1.22 g, 6.96 mmol) in toluene (20 mL). Then a Dean-Stark trap device was fit and the reaction refluxed for 0.5 h. After that, the mixture was cooled to 0°C, filtered through a silica gel pad and the solvent evaporated under reduced pressure to yield a residue (1.30g) which was purified by flash chromatography on silica gel, using a 2:1 Hexane/Et₂O mixture as eluent, to give the title compound **2** (517 mg, 1.69 mmol, 44%).

Melting point: 110.7–114.8 °C (White crystals, from hexane)

IR (KBr, cm⁻¹): 3274 (N-H); 3063, 1663, 881 (C=C); 3062, 811 (Ar); 1327, 1164 (SO₂); 666 (C-N).

¹H NMR (300 MHz, CDCl₃): δ= 0.94 (3H, *s*, Me_a-5'); 0.98 (3H, *s*, Me_b-5'); 1.08 (1H, *dt*, *J*=13.7 Hz, 4.2 Hz, H_b-3'); 1.32 (1H, *d*, *J*=10.6 Hz, H-7'); 1.63 (1H, *br d*, *J*=10.6 Hz, H'-7'); 1.85 (1H, *br d*, *J*=2.3 Hz, H-4'); 2.14 (1H, *ddd*, *J*=13.7 Hz, 8.1 Hz, 2.5 Hz, H_a-3'); 2.41 (1H, *br s*, H-1'); 2.44 (3H, *s*, Me-4); 3.22 (1H, *td*, *J*=7.9 Hz, 4.2 Hz, H-2'); 4.59 (1H, *s*, CH₂-6'); 4.72 (1H, *s*, CH₂-6'); 4.87 (1H, *d*, *J*=7.9 Hz, N-H); 7.32 (2H, *d*, *J*=8.1 Hz, H-3, H-5); 7.77 (2H, *d*, *J*=8.1 Hz, H-2, H-6).

Some signals were assigned by means of 2D NMR experiments.

¹³C NMR (75 MHz, CDCl₃): δ= 137.76 (C-1); 127.16 (C-2); 129.67 (C-3); 143.33 (C-4); 21.50 (Me-4); 52.82 (C-1'); 55.72 (C-2'); 35.23 (C-3'); 47.34 (C-4'); 41.00 (C-5'); 161.07 (C-6'); 34.02 (C-7'); 103.19 (CH₂-6'); 25.30 (Me_a-5'); 29.10 (Me_b-5').

Some signals were assigned by means of 2D NMR experiments.

EI-MS (70 eV, *m/z*): 305 (M⁺, 3%); 264 (2); 240 (M⁺-SO₂H, 10); 201 (2); 185 (3); 184 (6); 155 (Ts⁺, 14); 150 (M⁺-Ts, 23); 134 (M⁺-TsNH₂, 25); 121 (M⁺-TsNH-Me, 47); 108 (69); 91 (MePh⁺, 100); 79 (23); 65 (38); 53 (14); 41 (27).

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