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Methyl 3-Hydroxythieno[2,3-*b*]pyridine-2-carboxylate

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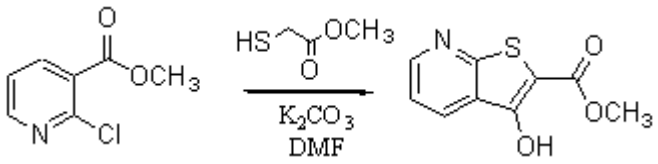
As part of a research programme targeting novel molecules as potential anti-inflammatory agents we synthesised methyl 3-hydroxythieno[2,3-*b*]pyridine-2-carboxylate based on the reported anti-inflammatory activity of the structurally related molecule 3-isopropoxy-5-methoxy-*N*-(1*H*-1,2,3,4-tetraazol-5-yl)-1-benzothiophene-2-carboxamide [1,2].



Methyl 2-chloro nicotinoate (1.0 g, 5.8 mmol) and methyl thioglycolate (0.63 g, 5.9 mmol) were dissolved in anhydrous DMF (10.0 mL) and potassium carbonate (0.96 g, 7.0 mmol) was added and the reaction mixture was heated to 100 °C under an atmosphere of nitrogen for 21 hours. The reaction mixture was allowed to cool and the reaction mixture was poured into water (50.0 mL) and the aqueous solution was extracted with ethyl acetate. Following the extraction the aqueous phase was acidified with concentrated hydrochloric acid and then re-extracted with ethyl acetate. The ethyl acetate extracts of the acidified aqueous phase were combined and dried over magnesium sulphate, filtered and evaporated under reduced pressure to afford (731.6 mg, 60.0 %) of the desired methyl 3-hydroxythieno[2,3-*b*]pyridine-2-carboxylate as brown crystals.

M.p. 159-161 °C.

MS: 210 $(M + 1)^{+\cdot}$.

IR: 3400, 3050, 2990, 1670, 1400, 1350, 1250, 1150, 1040, 990, 940, 790.

^{1}H NMR (300 MHz, DMSO-d_6): 3.88 (s, 3H, OCH_3), 7.51 (dd, J = 4.61, J = 8.16 Hz, 1H, ArH), 8.35 (dd, J = 1.56, J = 8.15 Hz, 1H, ArH), 8.74 (dd, J = 1.51, J = 4.49 Hz, 1H, ArH), 10.57 (br s, 1H, OH).

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Sample availability: available from the authors and MDPI.