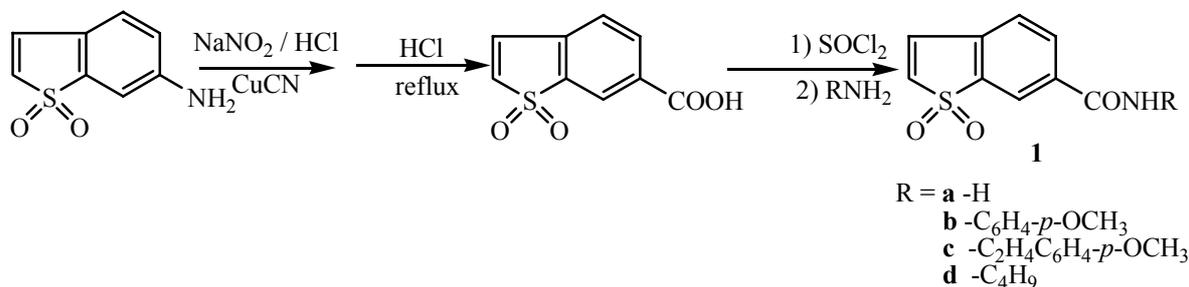


## NEW CARBOXAMIDE DERIVATIVES OF THE BENZO[*b*]TIOPHENE 1,1-DIOXIDE AS POTENTIAL ANTINEOPLASTIC AGENTS

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The benzo[*b*]thiophenesulphonamide (BTS) 1,1-dioxide derivatives have been recently reported as a new class of potential antineoplastic agents.<sup>1</sup> These compounds induce reactive oxygen species overproduction and apoptosis in tumour cells<sup>2</sup>, and a correlation between their cytotoxic activities and ability to inhibit a tumour-associated NADH oxidase of the plasma membrane has been described.<sup>3</sup> In order to look for more selective antitumour compounds we extended our study to related *N*-substituted 6-benzo[*b*]tiophenecarboxamide 1,1-dioxides (**1**). These carboxamide derivatives were obtained from the 6-aminobenzo[*b*]thiophene 1,1-dioxide by known procedures: Nitrosation of the amino derivative, subsequent treatment with cuprous cyanide, and then acid hydrolysis of the corresponding nitrile to give the 6-benzo[*b*]tiophenecarboxylic acid 1,1-dioxide. This was treated with thionyl chloride and amines to yield the corresponding carboxamides **1** (35-75%).



The cytotoxic activity of **1a-d** was tested against a panel of six human tumour cell lines representative of different types of solid tumours and leukaemias. All of these compounds showed a strong cytotoxic activity against the selected cell lines, with GI<sub>50</sub> values ranging from 0.002 to 7.85 μM. Compound **1b** was the most active among them the tested compounds, with GI<sub>50</sub> values of 0.002 (HTB-54), 0.047 (K-562), 0.76 (MEL-AC), 0.35 (HT-29), 0.004 (CCRF-CEM) and 0.003 (HeLa) μM. Selective assays are now in progress and they will be reported in due course.

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