

## SYNTHESIS OF SOME N<sup>1</sup>-n-DIMETHYLPHENYL-N,N-DIMETHYLTHIOUREAS WITH ANTIPROLIFERATIVE PROPERTIES

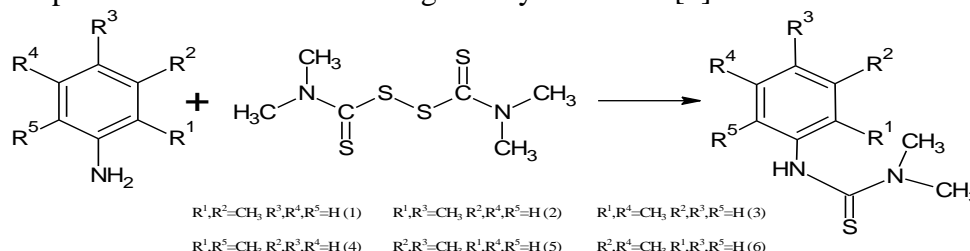
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Methods for synthesis of new compounds of thiourea derivatives are described. These compounds are of both theoretical and practical interest through their applications in various fields, as they possess valuable biological activities such as antifungal, antitumor, antiviral, antibacterial, pharmacological, herbicidal, and insecticidal properties. Thioureas have suitable C=S function groups, and they can be considered as useful chelating agents due to their ability to encapsulate into their coordinating moiety metal ions[1].



An efficient method for the synthesis of unsymmetrical substituted thiourea derivatives by means of simple condensation between available building blocks such as amines and carbon disulfide in aqueous medium, but this method uses a toxic reactive as carbon disulfide so we tried to substitute it with the accessible and nontoxic reactive as tetramethyldithiocarbamate (DTMT). Synthesis of N<sup>1</sup>-n-dimethylphenyl-N,N-dimethylthioureas was carried out between n-dimethylaniline and (DTMT). The ends of the reactions were checked by thin layer chromatography (TLC). N<sup>1</sup>-n-dimethylphenyl-N,N-dimethylthioureas presents white crystalline products, their structure was confirmed by <sup>1</sup>H and <sup>13</sup>C NMR Spectra and are presented in table below:

Nr.	Name	Melting point, °C	<sup>1</sup> H-NMR DMSO-d <sub>6</sub>	<sup>13</sup> C-NMR DMSO-d <sub>6</sub>
1	N <sup>1</sup> -2,3-dimethylphenyl-N,N-dimethylthiourea	170-172	8.8(s, 1H, NH), 7-6.8(m, Ar-H), 3.45(s, N-CH <sub>3</sub> ), 2.03, 2.24(s, CH <sub>3</sub> -Ar)	14.7, 20.6, 41.1, 125.3, 127.2, 128.0, 134.7, 137.1, 140.0, 181.9
2	N <sup>1</sup> -2,4-dimethylphenyl-N,N-dimethylthiourea	160-162	8.76(s, 1H, NH), 7.01-6.9(m, Ar-H), 3.26(s, N-CH <sub>3</sub> ), 2.27, 2.12(s, CH <sub>3</sub> -Ar)	18.3, 21.05, 41.1, 126.9, 129.3, 131.0, 135.7, 135.8, 137.7, 182.07
3	N <sup>1</sup> -2,5-dimethylphenyl-N,N-dimethylthiourea	145-147	8.75(s, 1H, NH), 7.12-6.8(m, Ar-H), 3.45(s, N-CH <sub>3</sub> ), 2.26, 2.12(s, CH <sub>3</sub> -Ar)	17.9, 20.8, 41.1, 127.0, 129.0, 130.0, 133.0, 135.0, 140.0, 181.9
4	N <sup>1</sup> -2,6-dimethylphenyl-N,N-dimethylthiourea	140-142	8.80(s, 1H, NH), 7.72-7.48(m, Ar-H), 3.42(s, N-CH <sub>3</sub> ), 2.27(s, CH <sub>3</sub> -Ar)	19.0, 40.6, 125.6, 126.7, 128.3, 128.8, 129.6, 131.5, 176.8
5	N <sup>1</sup> -3,4-dimethylphenyl-N,N-dimethylthiourea	180-182	8.88(s, 1H, NH), 7.2-6.8(m, Ar-H), 3.25(s, N-CH <sub>3</sub> ), 2.18(s, CH <sub>3</sub> -Ar)	19.32, 19.9, 41.2, 123.0, 127.0, 129.0, 132.0, 135.0, 139.0, 181.8
6	N <sup>1</sup> -3,5-dimethylphenyl-N,N-dimethylthiourea	190-192	8.80(s, 1H, NH), 6.89-6.74(m, Ar-H), 3.25(s, N-CH <sub>3</sub> ), 2.24(s, CH <sub>3</sub> -Ar)	21.4, 41.4, 123.0, 126.1, 126.4, 136.0, 137.0, 141.0, 181.6

These compounds were tested as anti proliferative agents.

1. Gulea A., Poirier D., Roy J., Stavila V., Bulimestru I., Țapcov V., Bărcă M., Popovschi L. In vitro antileukemia, antibacterial and antifungal activities of some 3d metal complexes: Chemical synthesis and structure – activity relationships // Journal of Enzyme Inhibition and Medicinal Chemistry, 2008; V. 23. Nr.6, pp.806-818.