

Synthesis, Spectroscopic Studies and Crystal Structure of 5,5'-Dimethoxy-3,3'-methanediyl-*bis*-indole as the Inhibitor of Cell Proliferation of Human Tumors

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5,5'-Dimethoxy-3,3'-methanediyl-*bis*-indole (**3**) was synthesized in a reductive cyclisation process from (*E*)-5-methoxy-2-nitro- β -morpholinestyrene. The solid state structure was probed by single crystal X-ray diffraction and ¹³C CP/MAS NMR methods. The results of the X-ray analysis indicate insignificantly different structure of both methoxyindole fragments of the molecule, and this is the main reason for the appearance of the double resonances in the solid state NMR spectrum. Interesting N-H $\cdots \pi$ interactions were observed which may have a functional role in biological features of **3**. 5,5'-Dimethoxy-3,3'-methanediyl-*bis*-indole at conc. $1 \cdot 10^{-4}$ M reduces the growth of MCF7 (breast), NCI-H460 (lung), and SF-268 (NCS) cells to 21, 0, and 48%, respectively.

Key words: 5,5'-Dimethoxy-3,3'-methanediyl-*bis*-indole, Anticancer Agent,
Reductive Cyclisation, X-ray Diffraction, ¹³C CP/MAS NMR