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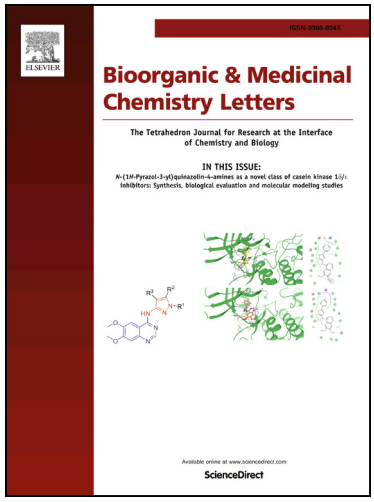

On the Synthesis of Quinone-based BODIPY Hybrids: New Insights on Anti-tumor Activity and Mechanism of Action in Cancer Cells

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On the Synthesis of Quinone-based BODIPY Hybrids: New Insights on Antitumor Activity and Mechanism of Action in Cancer Cells

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Abstract: Fluorescent quinone-based BODIPY hybrids were synthesised and characterised by NMR analysis and mass spectrometry. We measured their cytotoxic activity against cancer and normal cell lines, performed mechanistic studies by lipid peroxidation and determination of reduced (GSH) and oxidized (GSSG) glutathione, and imaged their subcellular localisation by confocal microscopy. Cell imaging experiments indicated that nor-β-lapachone-based BODIPY derivatives might preferentially localise in the lysosomes of cancer cells. These results assert the potential of hybrid quinone-BODIPY derivatives as promising prototypes in the search of new potent lapachone antitumor drugs.

Keywords: Quinone; BODIPY; Lapachone; Cancer; Subcellular localization.