

P006 The *In Vitro* Studies of Novel Bis-naphthalimidopropyl Polyamine Derivatives Against CaCo-2 Cells
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The *in vitro* studies of novel polyamine derivatives; Bisnaphthalimidopropyl Spermidine (BNIPSpd), Decane (BNIPDadec) and Diaminononane (BNIPDanon), were investigated to establish their therapeutic anti-cancer potential against human colon cancer cells (CaCo-2). These novel compounds demonstrated good *in vitro* cytotoxicity with CaCo-2 cells exhibiting IC₅₀ values ranging between 0.5 μM – 19.9 μM and 1.3 μM – 11.2 μM after 24 and 48 hours drugs exposure respectively. Strong evidence of apoptotic cell death from these novel compounds was determined through Acridine Orange/Ethidium Bromide uptake and cell morphology experiments. The effect of BNIPSpd, BNIPDadec and BNIPDanon (1 μM – 10 μM drug concentrations) on the level of polyamines on CaCo-2 cells were studied. The results showed significant changes in polyamine levels after 24 hour drug exposure. Furthermore, the modulation of HO-1 (Heme-Oxygenase) and Bcl-x_L (Anti-apoptotic) genes was also studied after drug treatment and these results will be presented and discussed. In conclusion, the results obtained from this work demonstrate that the novel Bis-naphthalimidopropyl polyamine derivatives exhibit very good potency against CaCo-2 cells while initiating cell death by apoptosis and hence have the potential in the future to become therapeutic anti-cancer agents.