

intact and RNase-treated LMG160 using circular dichroism in the range of far UV (190-260 nm) and fluorescence spectroscopy. The results showed that α -helical content was abundant in both intact and RNase-treated LMG160 in the absence of NaCl although the helicity of RNase-treated LMG160 was more than intact LMG160. Intrinsic emission fluorescence spectra imply that although both emission maxima were almost the same, intact LMG160 showed 8 nm red-shift compared to the RNase-treated form. It means that accessibility of tryptophan residues to the bulk solvent is increased. By increasing sodium chloride concentration from 0-1 M, the α -helical content of the intact LMG160 was decreased almost 8% by increasing %2.1 β -sheets, %1.3 β -turn and %4.7 random coil. The addition of increasing amount of sodium chloride to the intact and RNase-treated LMG160 exhibited 50% and 25% emission maxima reduction, respectively. Using modified Stern-Volmer equation, intact and RNase-treated LMG160 Ksv was 6.19M⁻¹ and 1.67M⁻¹, respectively. Also the amount of τ parameter indicated that the fraction of the initial fluorescence that is accessible to NaCl is 66% further for the intact LMG160 compared to RNase-treated. The result suggests that RNA moiety is important in this ribonucleoprotein structure implying that the intact LMG160 exhibits more relaxed structure compared to RNase treated protein.

Keywords: Ribonucleoprotein, Low Mobility group (LMG) proteins, Circular dichroism, Fluorescence spectroscopy, Ionic strength.

Abstract No.230

The Effect of some Synthetic Benzochromene Compounds on ROS and NO generation in Breast Cancer Cell Lines (MCF-7, MDA-MB231 and T47D)

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The cytotoxic activity of many chemotherapeutic drugs is resulted of their potential in apoptosis induction. Apoptosis is defined as programmed cell death that can occur in response to a variety of insults, such as cytotoxic compounds. Reactive oxygen species (ROS) and nitric oxide (NO) generation are some of the signs observed in cells subjected to anticancer drugs treatment. In contrast to their role on promoting cell growth under non-stress conditions, ROS are powerful inducers of apoptosis when cells are under stress. Nitric oxide, which is one of the smallest biological products of mammalian cells, plays various roles such as an intracellular or transcellular

messenger and apoptosis inducer in cells. Intracellular ROS generated by some synthetic benzochromene compounds were measured by a non-fluorescence dye, DCFH-DA, which is permeable in cells and interacts with intracellular ROS to generate fluorescent 2', 7'-dichlorofluorescein (DCF). DCF can then be measured by spectrophotometer ($\lambda_{max} = 525$ nm). We also measured the nitrite concentration in the culture medium as an indicator of NO production using the Griess reaction method. Previously we showed that these compounds induce apoptosis in these cell lines. In this study we demonstrated that the amount of ROS generations in MCF-7 and MDA-MB cells treated for 4 and 24 h were significance and time-dependent. Nevertheless, T47D cells that were treated for 4 h didn't produce ROS but after 24 h ROS production was considerable. None of the cell lines produced NO after 4 h. NO generation by MCF-7 cell line treated for 24 h, was significant. However, these compounds did not induce NO generation in MDA-MB231 and T47D cell lines. This study indicated that one of the ways that these compounds can induce apoptosis is by increasing ROS generation. However this needs to be worked on in detail.

Keywords: Breast Cancer, Benzochromene Derivatives, ROS, NO.

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Study on the Interaction of L-Proline-Derived Aminophosphinic Acid Ligand with Bovine Serum Albumin

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Organo-phosphinic acids are known as organic derivatives of hypophosphorus acid (H₃PO₂) and have found potential applications in the areas of industrial, agricultural and medicinal chemistry. The structure of the phosphinic functional group mimics the transition state of peptide hydrolysis. Among the α -functional phosphinic acids, α -aminophosphinic acids are an interesting class of compounds possessing broad biological activities. Herein, we report synthesis and the study on the interaction of a carrier protein with a new L-proline based aminophosphinic acid ligand. Serum albumins are one type of proteins possessing various physiological functions. Serum albumins act as carriers for transporting of many of compounds such as fatty acids, amino acids and drugs. Bovine serum albumin (BSA) is used in biophysical and biochemical studies as a model protein because of low