spectrophotometery, fluorescence spectrophotometry, cyclic voltammetry and viscosity measurements. The decrease of the absorption spectra of (Phend)Cl_3-Au(III) complex were observed in the presence of DNA, and the fluorescence intensity of (Phend)Cl_3-Au(III) was decreased with the addition of DNA. The relative viscosity of DNA increased with the addition of (Phend)Cl_3-Au(III) complex. The calculated binding constants of (Phend)Cl3-Au(III) complex with DNA at 250 nm and 293 K were 5×10^6 M^{-1}. Cyclic voltamograms due to cyclic voltammetry showed that, cathodic peaks shifted to positive potential that indicates intercalation interaction between (Phend)Cl_3-Au(III) complex and CT-DNA. All these results indicated that (Phend)Cl_3-Au(III) complex can bind to DNA and the major binding mode is intercalative binding.

Keywords: Calf-thymus DNA, (Phend)Cl3-Au(III), Interaction, Spectrophotometry, Intercalation.

Abstract No.272

Hyperthermia Effects on IC-21 Macrophage Like Cell Line To Assay Activity and Expression of Inducible Nitric Oxide Synthase (iNOS) Enzyme

Manoochehr Goojai [1], Samideh Khoei [2], Bahram Goliaei [2]*

1. Department of Biology, Azad University of Bonab, East Azerbayjan, IR
2. Laboratory of Biophysics and Molecular Biology, IR
(E-mail: ghojaie@gmail.com)

Nitric oxide (No.) is a uniquely diffusible and reactive molecular messenger in vascular and immune systems, motivated researches for evaluating its biosynthesis by the macrophages. As macrophages are often called to function at times of elevated ambient temperature (e.g. during local inflammation or systemic fever), it is possible that their production of critical effector molecules such as nitric oxide ion or nitric oxide synthase (iNOS) , is sensitive to physiological changes in temperature. To test this possibility, the threshold requirement for production of No. and iNOS in macrophage like cell line of IC-21 under normothermic conditions (37 °C) and following mild hyperthermia (40, 42 and 44 °C) were compared. Temperature gradient showed considerable increases of No. concentration at 40 and 42 °C and decrease at 44 °C (24 h incubation). Further, if IFN-• and lipopolysaccharide (LPS) were given before thermal exposure, a substantial increase in No. and iNOS was observed (highest at 42 °C after 24 h incubation) over that seen using cells kept exposed to hyperthermia alone or that of at normthermic conditions (37 °C). As RT-PCR data have revealed the thermal regulation of iNOS expression is not entirely at the transcriptional level, suggesting possible points of post-transcriptioal thermal sensitivity, so our direct application of hyperthermia on macrophages without any treatment supports this hypothesis. The data in this study reveal the potential of mild hyperthermia (elevated physiological temperature) to increase No. production and iNOS synthesis in using peritoneal type macrophage like cell line. These may support the concept that altering the thermal micro environmental would be an important means by which the host can affect the macrophage responses.

Keywords: Nitric Oxide, Nitric Oxide Synthase (iNOS), Macrophage, IC-21 Cell Line and Hyperthermia.

Abstract No.273

Detection of Fibrillar Aggregates and Inhibition of Amyloid-Mediated Peroxidase Activity Using the Novel Benzothiazole- and Benzofuranone-Derivatives Fluorescence Compounds

Seyyed Abolghasem Ghadami [1,2], Reza Khodarahmi [1,3], Hadi Adibi [3], Sirous Ghobadi [2]*

1. Medical Biology Research Center, Kermanshah University of Medical Sciences, Kermanshah, IR
2. Departments of Biology, Faculty of Sciences, Razi University, Kermanshah, IR
3. Faculty of Pharmacy, Kermanshah University of Medical Sciences, Kermanshah, IR
(E-mail: saghadami@mbrc.ac.ir)

Alzheimer's disease is characterized by the presence of amyloid deposition. Thioflavin T (ThT) has been one of the molecules of choice to attempt the detection of amyloid deposits, however, it has been reported that ThT was unable to cross blood–brain barrier (BBB). Since compounds without a permanent positive charge are mainly capable of crossing the blood–brain barrier, there is a strong motivation to develop suitable compounds for in vitro fibril quantification as well as for in vivo amyloid imaging. Moreover, oxidative stress has frequently been reported to play a critical role in the onset/progression of some neurodegenerative disorders. In this study, we synthesized and employed benzothiazole and benzofuranone derivatives (including neutral ThT analogues), both as fluorescent probes to quantitatively determine the amyloid fibrils made of chymotrypsin (and crystalline) and as potential inhibitors for peroxidase activity. Analyses of the in vitro binding studies indicated that compounds 2 and 4 bind to the amyloid structures successfully while compounds 1 and 3 showed a low affinity in binding to fibrils. Furthermore, compounds 3 and 4 were