

oligomerization are different but eventually they give rise to the same type of oligomeric species.

Keywords: Superoxide dismutase 1 (SOD1), Aggregation, ALS, Neurodegenerative Disease.

Abstract No.123

Application of Hollow fiber-Supported Liquid-Phase Microextraction Coupled with HPLC for the Determination of some Chiral Drug Enantiomers-Protein Binding

*Mehdi Hatami*¹, Khalil Farhadi¹, Laya Afrasiabi²*

1. Faculty of Science, Dept. of Chemistry Urmia University, Urmia, IR
2. Faculty of Science, Dept. of Chemistry Payam nour University, Urmia, IR
(E-mail: mehdi.hatami58@yahoo.com)

A hollow fiber liquid-phase microextraction technique coupled with high-performance liquid chromatography was employed for determination and evaluation of the binding characteristics of drugs to human serum albumin (HSA). Enantiomers of Donepezil and Lorazepam were investigated as a model system. After optimization of some influencing parameters on microextraction, the proposed method was used for calculation of the target drug distribution coefficient between n-octanol and the buffer solution as well as study of drug-HSA binding in physiological conditions. The developed method shows a new, improved and simple procedure for determination of free drug concentration in biological fluids and the extent of drug-protein binding.

Keywords: Hollow Fiber, HSA, Donepezil, Lorazepam Enantiomer, Binding.

Abstract No.124

Chemometric Studies of Hemoglobins from the Caspian Sea Sturgeon (*Acipenser persicus* and *Acipenser stellatus*) by n-dodecyl Trimethylammonium Bromide

*Shohreh Ariaeenejad*¹, Kaveh Kavousi², Mehran Habibi-Rezaei³, Najmeh Poursasan⁴, Ali Akbar Moosavi-Movahedi⁴*

1. Dept. of Marine Biology, Faculty of Marine Science and Technology, Science and Research Branch, Islamic Azad University, Tehran, IR

2. Control and Intelligent Processing Center of Excellence, School of Electrical and Computer Engineering, University of Tehran, Tehran, IR
3. School of Biology, College of Science, University of Tehran, Tehran, IR
4. Institute of Biochemistry and Biophysics, University of Tehran, IR
(E-mail: shariaee@gmail.com)

Variety of hemoglobin (Hb) forms in fish is usually well adapted to the different ecological conditions or various habitats. In the current study, Hbs from two Sturgeon species of the Southern Caspian Sea Basin were investigated. After extraction and separation of hemoglobin from whole blood, we showed that although both species have variable Hbs with different isoelectric points, their dominant Hbs purified by ion-exchange on CM-cellulose chromatography. The dominant Hbs from these blood fishes were utilized for further experiments. In this study, the behavior of Hbs during the denaturation and process by n-dodecyl trimethylammonium bromide (DTAB) is investigated. In chemometric study, the interaction of DTAB as a cationic surfactant under variable concentrations, with the purified dominant hemoglobins (Hbs) was investigated using UV-visible absorption and circular dichroism (CD) spectra. The analysis of the obtained spectral data using singular value decomposition (SVD), Simple-to-use interactive self-modeling mixture Analysis (SIMPLISMA), evolving factor analysis (EFA) and multivariate curve resolution-alternative least square (MCR-ALS) as well-known chemometric techniques. The chemometric resolution techniques were used to determine the number of the components and mole fractions of the oxidized Hbs that donate the evidence for the existence of three different molecular components including native (N), intermediate (I) and denatured (D) in sturgeon Hbs. According to the distribution of intermediates broaden in a range of DTAB concentrations, the aggregation state of Hbs are slightly reduced from *Acipenser stellatus* to the *Acipenser persicus*. The results demonstrate a significant relationship between stability of fish hemoglobins and habitat depths.

Keywords: Sturgeon Hemoglobins, Intermediates, Chemometric Analysis, Aggregation.

Abstract No.125

The Concept of Hyperfold and Its Application to Evidence Theoretical Protein Fold Prediction

*Kaveh Kavousi¹, Mehdi Sadeghi*², Behzad Moshiri¹, Babak N. Araabi¹, Ali Akbar Moosavi-Movahedi³*

1. Control and Intelligent Processing Center of Excellence, School of Electrical and Computer Engineering, University of Tehran, Tehran, IR
2. National Institute of Genetic Engineering & Biotechnology, Tehran, IR