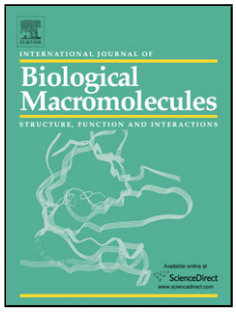

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PII: S0141-8130(16)32148-1
DOI: http://dx.doi.org/doi:10.1016/j.ijbiomac.2016.12.005
Reference: BIOMAC 6819

To appear in: *International Journal of Biological Macromolecules*

Received date: 24-10-2016
Revised date: 2-12-2016
Accepted date: 4-12-2016

Please cite this article as: Awanish Kumar, Meena Bisht, Pannuru Venkatesu, Biocompatibility of ionic liquids towards protein stability: A comprehensive overview on the current understanding and their implications, International Journal of Biological Macromolecules http://dx.doi.org/10.1016/j.ijbiomac.2016.12.005

Biocompatibility of ionic liquids towards protein stability: A comprehensive overview on the current understanding and their implications

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ABSTRACT

Over the past years since the discovery of ionic liquids (ILs), there is an increased demand to consider ILs as novel biocompatible co-solvents for proteins. Due to their tunable physical properties ILs can adjust themselves in any required experimental conditions starting from protein extraction to enzyme catalysis at elevated temperature. In recent years, large numbers of ILs have been synthesized and their effect on protein stability has been illustrated. With the rapid growth in various kinds of ILs, our understanding of protein stability in ILs has substantially increased. It is not necessary that a particular IL that is biocompatible to a protein will behave same for the other. Therefore, it is extremely essential to collect the literature dealing with the direct involvement of ILs in protein folding/unfolding studies under the same roof. This review focuses the tremendous accomplishments achieved in recent years in the field of protein stability in ILs. We hope that this would also help to set a stage where we can identify, explore and compare the mechanistic behavior of protein folding/unfolding in ILs. This review will surely bring a new boost in protein folding studies from the chemical biology perspective.

Summary of abbreviations

Name of the amino acid/proteins/ionic Liquid **Abbreviations**