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Design, synthesis and aggregation properties of amino acid based amphicharged bolaamphiphilic surfactants

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The noun "bola" relates to the shape of a South American missile weapon. The simplest form of "bola" consists of two balls which are attached to both ends of a cord. The term "<u>bolaform electrolyte</u>" (short form: "bolyte" or "bolion") was introduced by Fuoss and Edelson in 1951 for a chain of hydrophobic groups connecting two hydrophilic end groups. For less water-soluble analogues, the name "<u>bolaform amphiphiles</u>" (short form: "bolaamphiphiles") is preferred. The biological and biochemical applications of amino acids and synthetic peptides have evolved over the years, offering an effective means to satisfy the technological demand of modern biomaterials. Design of peptide-based bolaamphiphiles offers a simple and facile means to organize peptide and amino acid motifs with the aid of nonbiological hydrophobic centers, realizing a protein-mimetic configuration at the molecular level. Inspired by these thoughts, we have synthesized a new class of amino acid based bolaamphiphilic surfactants derived from L-Lysine and L-Glutamic acid residues and have studied their applications in different fields. The results of our studies in this direction are presented in the poster.

Biography

Neelakshi Shaku is affiliated to Indian Institute of Technology, Kanpur. She is a recipient of many awards and grants for her valuable contributions and discoveries in major area of subject research. Her international experience includes various programs, contributions and participation in different countries for diverse fields of study. Her research interests include <u>Protein Biochemistry</u>, Protein Structure and <u>Protein Chemistry</u>.