
Synthesis, Characterization and Anti-Bacterial Activity of Certain Thermotropic Liquid Crystalline Poly(ester-amides) containing 2,6-bis(3-methoxybenzylidene) Cyclohexanone Moiety in the Main Chain

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ABSTRACT

A series of five thermotropic liquid crystalline poly(ester-amides) were synthesized by polycondensation of varying dicarboxylic acids with a common diamine namely 1,4-diaminobenzene and a common diol namely 2,6-bis(4-hydroxy-3-methoxybenzylidene)cyclohexanone (CHBV). The viscosity measurements and solubility data were used for the qualitative characterization of these synthesized poly(ester-amides). For investigating the microstructural features of these synthesized poly(ester-amides), the spectroscopic techniques such as FT-IR, ¹H NMR, ¹³C NMR were performed. The thermal phase transition behavior of these poly(ester-amides) were studied by Differential Scanning Calorimetry (DSC). The morphology of these poly(ester-amides) were established with SEM analysis. X-ray diffraction (XRD) patterns were taken to assess the degree of crystallinity in these poly(ester-amides). These poly(ester-amides) displayed potential antimicrobial activity against certain bacterial strains.

KEYWORDS

Bisbenzylidenecyclohexanone, Poly(ester-amides), Polycondensation, Bactericidal