

Synthesis of Some New Pyrrolo[3,4-f]isoindole Derivatives Bearing a 1,3-Thiazolidin-4-one Moiety

A series of new N,N'-bis[4-oxo-2-(pyridine-2-yl)-1,3-thiazolidin-3-yl]-2,2'-[1,3,5,7-tetraoxo-5,7-dihydropyrrolo[3,4-f]isoindole-2,6(1H,3H)-diyl]diacetamide derivatives were synthesized with acceptable yields starting from pyromellitic dianhydride which was treated with potassium cyanate in DMF under reflux to afford pyromellitic diimide. The latter was further reacted with ethyl chloroacetate in refluxing absolute ethanol to yield diethyl 2,2'-[1,3,5,7-tetraoxo-5,7-dihydropyrrolo[3,4-f]isoindole-2,6(1H,3H)-diyl]diacetate. The subsequent treatment with excess hydrazine hydrate (80%) gave 2,2'-[1,3,5,7-tetraoxo-5,7-dihydropyrrolo[3,4-f]isoindole-2,6(1H,3H)-diyl]diacetohydrazide which was condensed with substituted pyridine-2-carbaldehydes in ethanol in the presence of a catalytic amount of glacial acetic acid. The resulting Schiff bases underwent cyclization with thioglycolic acid in the presence of ZnCl₂ to produce the corresponding 1,3-thiazolidine derivatives. The product structures were confirmed by FTIR and ¹H NMR spectra and elemental analyses.