



Abstract

Different types of heterocycles are playing a crucial role in every field of life to maintain different disciplines of life. Their numerous biological applications hints towards their use in latent fingerprinting. The purpose of the study is to use economical methods for the advanced studies of this application. Various physical, chemical, physio-chemical and optical methods are involved in the visualization of fingerprints. In this study, novel derivatives of imidazoles were used to check their ability in the field of latent fingerprinting. Their physical interactions with the constituents of fingerprints were checked on a glass slide for latent fingerprinting application. The results are then observed under an optical light source to predict the interactions. The results showed better visualization of the fingerprints under a UV lamp. To check the nature of these interactions and efficiency of the sample, sample solution was allowed to react with glycine and tyrosine at different environmental conditions and record their interactions by using a UV-Visible Spectrophotometer. All the derivatives of imidazoles showed good interactions with glycine which indicated in the form of single mixture peak in the spectrum. Tyrosine, on the other hand, showed different behavior with different samples. Overall, Imidazoles developed a stable interactive relation with the fingerprints under physical, optical and chemical parameters which showed their usefulness for the purpose of screening latent fingerprints.