SHORT COMMUNICATIONS

FORCE DEGRADATION AND STABILITY STUDY OF 7-HYDROXY COUMARIN

ABSTRACT

The research investigates the stability of 7-hydroxy coumarin i.e. umbelliferone, a compound with diverse applications, through forced degradation studies under various conditions. These investigations aim to comprehend its susceptibility to degradation and provide insights crucial for its safe handling and formulation. Umbelliferone displays differing degrees of vulnerability to distinct stressors: it exhibits higher susceptibility to alkali-induced and photolytic degradation, signaling the necessity for cautious management under these conditions. Conversely, it demonstrates moderate susceptibility to acid and water-induced degradation. The findings underscore the importance of handling umbelliferone carefully, particularly in environments, where it is more prone to degradation. Furthermore, the study suggests future explorations to elucidate the structures of degradation products, potentially enhancing our understanding of its stability profile. This comprehensive analysis not only elucidates umbelliferone's stability nuances but also accentuates the significance of forced degradation studies in evaluating the inherent stability of pharmaceutical compounds, offering crucial insights for formulation and storage practices.