A Study on Hydrolytic Stability of Isatin N-Mannich Bases

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Abstract—Stability parameters of biologically active compounds with N-Mannich base motif in their structure, which is susceptible to hydrolysis, have been studied. A procedure for the synthesis of small molecule compounds reactivating the function of the p53 tumor suppressor protein was developed, and the dependence of the Mannich base degradation rate on the structure of the compounds was established. For the hydrolysis reaction we determined the rate constants and calculated ρ, $\Delta G^{\#}$, ΔH, and ΔS. Modifications of active compounds that retain the activity at the maximum possible stability were proposed.

Keywords: p53, MDM2, hydrolysis of N-Mannich bases, isatin

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