SYNTHESIS OF RHODANINE DERIVATIVES WITH A POSSIBLE ANTIMETABOLITE ACTIVITY

VII. 3-(β-Carboxy-α-Phenylethyl)Rhodanine and the Products of Its Condensation with Oxo Compounds

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The condensation of chloroacetic acid with the dithiocarbamate obtained by the reaction of carbon disulfide with an alkaline solution of β-phenyl-β-alanine, and the subsequent heating of the condensation product with HCl, leads to the formation of 3-(β-carboxy-α-phenylethyl)rhodanine $C_{12}H_{11}NO_3S_2$, mp 147–148° C, yield 68.9%, λ_{max} 262, 296, 383 nm (log ε 3.89, 3.85, 1.70). The condensation of this substance with benzaldehyde, ten different benzaldehyde derivatives, cinnamaldehyde, α-naphthaldehyde, 9-anthraldehyde, acetone, biacetyl, cyclohexanone, cyclopentanone, furfural, and isatin and its 5-bromo derivative in glacial acetic acid or in an ammonium buffer solution leads to the formation of 5-substituted derivatives with yields of 70.8–96.5%. In the case of acenaphthene quinone, a mono derivative $C_{24}H_{15}NO_4S_2$ is formed with a yield of 91.6% and a di derivative $C_{36}H_{24}N_2O_6S_4$ with a yield of 0.6%. The UV spectra of the 5-substituted derivatives of 3-(β-carboxy-α-phenylethyl)rhodanine are characterized by four absorption maxima: at about 232 nm (log ε 4.09–4.25), at 253–279 nm (log ε 3.81–5.07), at 289–320 nm (log ε 3.52–4.40), and at 341–440 nm (log ε 3.81–4.63).

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