A NEW METHOD OF OBTAINING trans-β-(INDOL-3-YL)ACRYLIC ACID

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The preparation of trans-β-(indol-3-yl)acrylic acid (I) by the condensation of indole-3-carbaldehyde or its 1-acetyl derivative (III) with malonic acid in the presence of pyridine and piperidine has been described previously [1, 2]. We have obtained the acid (I) by the Perkin reaction, which has not previously been used to obtain acrylic acids of the indole series.

When the aldehyde (II) was boiled in acetic anhydride with sodium acetate in a ratio of 1:6:2 for 3 h and the reaction mixture was then poured into water, a yellow crystalline product was obtained which consisted of a mixture of 1-acetylindole-3-carbaldehyde (III) and trans-β-(1-acetylindol-3-yl)acrylic acid (IV), as was found by chromatography [on Silufol in the benzene–ether (1:1) system, R_f for (III) 0.50; for (IV) 0.35]. The mixture was boiled in benzene. The residue insoluble in hot benzene was the pure acid (IV), as was confirmed by its PMR, UV, and IR spectra. It was identical with a sample obtained by another method [3]. Yield 17.2%, calculated on the aldehyde (II) taken in the reaction.

Saponification of the acid (IV) with ethanolic alkali led quantitatively to the acid (I), identical with an authentic sample.

LITERATURE CITED

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