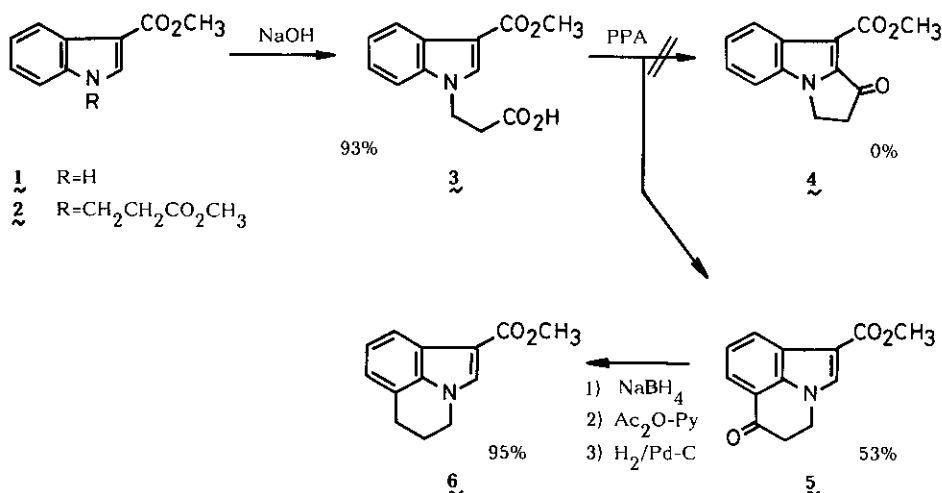




water, the reaction mixture was extracted with dichloromethane and the extract was dried with Na_2SO_4 . Only a single cyclization product **5** [mp 152-153°C; MS m/z 229(M^+); $^1\text{H-NMR}$ $\delta(\text{CDCl}_3)$ 3.10(2H, t, $J=7$ Hz), 3.90(3H, s), 4.56(2H, t, $J=7$ Hz), 7.37(1H, t, $J=8$ Hz), 7.58(1H, d, $J=8$ Hz), 7.91(1H, s), 8.32(1H, d, $J=8$ Hz)] was obtained by silica gel column chromatography in 53% yield. The structure was deduced from the spectroscopic data to be pyrrolo[3,2,1-ij]quinoline derivative **5** produced by cyclization onto 7-position of the indole nucleus. In this reaction, the alternate cyclization product **4** was not detected. The tricyclic ketone **5** was further derived to **6** [mp 30-40°C; MS m/z 215(M^+); $^1\text{H-NMR}$ $\delta(\text{CDCl}_3)$ 2.24(2H, m), 2.98(2H, t, $J=5$ Hz), 3.92(3H, s), 4.16(2H, t, $J=5$ Hz), 7.00(1H, d, $J=8$ Hz), 7.20(1H, t, $J=8$ Hz), 7.77(1H, s), 7.92(1H, d, $J=8$ Hz)] by (1) NaBH_4 reduction, (2), acetylation with $\text{Ac}_2\text{O/Py}$, and (3) hydrogenolysis with $\text{H}_2/\text{Pd-C}$ in 95% overall yield.

Thus we succeeded in introduction of an acyl or alkyl substituent onto 7-position of the indole nucleus via intramolecular cyclization of a stabilized indole-1-propanoic acid. This procedure may have a broad applicability for synthesis of indole derivatives. Further application of this regiospecific cyclization is now in progress.

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