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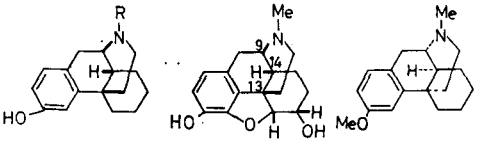
Steric correlation between (−)-3-hydroxy-*N*-methylmorphinan and (−)-morphine and related compounds

SIR,—The recently published investigation (Casy & Hassan, 1967) of the optical rotatory dispersion characteristics of (−)-3-hydroxy-*N*-methylmorphinan (levorphanol, I; R = Me) and (−)-morphine (II) gave strong evidence that the configuration of the C-9, 13 and 14 asymmetric centres of I are the same as those of the corresponding centres of II. These results are in agreement with previous conclusions (Beckett & Anderson, 1960) based on work involving stereoselective adsorbents.



I II III

May we draw your attention to the fact that the stereochemical problem discussed above has already been unambiguously solved by chemical degradation studies (Corrodi, Hellerbach & others, 1959). These findings proved further that the morphine antagonist (−)-3-hydroxy-*N*-allylmorphinan (levallorphan, I; R = $-CH_2-CH=CH_2$) has the same configuration as levorphanol (I; R = Me), while the cough-relieving compound (+)-3-methoxy-*N*-methylmorphinan (dextromethorphan) corresponds to the enantiomeric structure III.

In addition, the degradation experiments showed that the structural formulae I, II, III represent the absolute configurations, thus providing a more fundamental basis for understanding of the biological actions of these substances and the responses of their biological receptors.

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