NOTES

THE CARBON-13 NMR SPECTRUM OF GOUGEROTIN

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Gougerotin was isolated from Streptomyces gougerotii in 1962\(^1\), its structure was established in 1969\(^2\) and total syntheses were announced in 1972\(^3\) and in 1975\(^4\).

In the course of a soil screen we isolated gougerotin from an organism identified as Streptomyces puniceus subsp. doliceus subsp. nov. (NRRL 11160). It was co-produced with the clazamycins\(^5,6\). The ultraviolet\(^3\) and proton magnetic resonance\(^7\) spectra of our sample were in good agreement with those published for gougerotin. Identification was completed when we interpreted the C-13 NMR spectrum. Since the assigned spectrum can facilitate early identification of this antibiotic and its analogs\(^8\) and be useful in biosynthetic studies\(^9\), we present it here.

The CMR spectrum of gougerotin in D\(_2\)O consists of 15 lines. The chemical shifts and assignments of these are shown in Fig. 1.

The cytosine assignments\(^10\) were the simplest to make in view of the certainty of the presence of a cytosine residue (the UV and PMR spectra). The remainder of the spectrum can easily be misinterpreted to be that of a furanoside ring to which was attached a carbon bridge as in the ezomycins. However, comparison with the published spectra of hikizimycin\(^11\) (for corrected structure see references 12 and 13), showed that a 4-amino-4-deoxypiranose ring was present. The remainder of the spectrum was assignable on the basis of chemical shifts once it was accepted that a uronamide was present and that the \(\delta\) 62 triplet was assignable to a serine moiety. The remainder of the spectrum was assigned from chemical shift tables.

References

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