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Molecular and crystal structure of the polynucleotide complex: Polyinosinic acid plus polydeoxycytidylic acid $\hat{\sim} \dagger$

E.J. O'Brien ^{a, b, $\hat{\sim}$} ... A.W. MacEwan ^{a, b}

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Abstract

The complex between polyinosinic acid and polydeoxycytidylic acid is a double-helical molecule similar in structure to RNA and to the DNA-RNA hybrid. The complex is a 12-fold helix and crystallizes in a rhombohedral space group with three molecules per unit cell. The molecular structure was refined by a computer program that minimized a function involving both the fit to the X-ray data and the stereochemical energy of the molecule. The orientation of the molecule in the unit cell was determined by analysis of the three-dimensional Fourier transform and the intermolecular stereochemistry. In the refined structure the 2'-hydroxyl group in the ribose sugar does not form a hydrogen bond within the same molecule, but may form one to a phosphate oxygen atom in the neighbouring molecule.



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€ The later stages of the work were completed while E. J. O'Brien was at the Medical Research Council Biophysics Research Unit, King's College, 26-29 Drury Lane, London, W.C.2, England (present address).

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