



SDI Review Form 1.6

Journal Name:	International Journal of Biochemistry Research & Review
Manuscript Number:	Ms_IJBCRR_31086
Title of the Manuscript:	THE DOUBLE HELIX IN RETROSPECT: A CRITIQUE OF AVAILABLE EVIDENCE
Type of the Article	Opinion Article

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This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

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PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<u>Compulsory</u> REVISION comments	P1L15: (sic), P1L16: eerie? P1L21 Indeed, a particularly intriguing question relates to the extent of the double helical form in solution – assumed as self-evidently total so far. P1L24: peremptorily or peremptory? dismissively? P4L85: None of these considerations <i>per se</i>, however, proves or disproves the existence of <i>ds</i>-DNA in solution. Thus, DNA replication could occur upon a template strand without prejudice to the possibility that the <i>ss</i> form exists – even exclusively – in solution. The author of this manuscript seems to be strongly against the idea of <i>ds</i>DNA in solution. He has provided some arguments against it. Unfortunately he is totally ignorant of the most important works, namely, the very extensive studies of nucleic acid molecules in solution by nuclear magnetic resonance (NMR) method in the past 30 years or so. The well-established two-dimensional and multi-dimensional NMR studies have enabled the chemical shift assignments of almost every proton in the nucleic acid molecules, and allow their estimates of distances, which has allowed the structural reconstruction of the whole nucleic acid molecules in solution. Every exchangeable imino proton of thymine or guanine in the very downfield position of -15 or -13 ppm clearly indicate that complementary DNAs form a stable duplex in solution. The evidences are so strong and	These stylistic issues can be taken up at proofs. No, I have an open mind on the issue! As to NMR methods there are certain problems. For the most part detailed NMR analysis is confined to relatively short oligonucleotides which are constrained to form duplexes. The NMR spectra of natural DNA is far too complex for all H-bonded signals to be assigned, and to distinguish between duplexes and hairpin loops. A particularly tricky physical organic problem is being addressed in this paper, and if NMR is to be used, then specially designed experiments



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	obvious, hence it is of little use to argue against the dsDNA formation in solution. The author needs to study NMR and see how it can be used to monitor DNA duplex formation in solution, as one can see clearly how the base pairs are melted away one by one when temperature is slowly increased, and up to a temperature, all imino protons are gone to become single-stranded.	would have to be undertaken to obtain unambiguous results. As it stands, the available NMR evidence appears no better than those obtained by other approaches. All the same, I have included a short paragraph on this topic and a new reference (no. 15).
<u>Minor</u> REVISION comments		
<u>Optional/General</u> comments		