

Reviewer's Comment:

I still have the question of dsDNA formation in solution.

For sure, NMR cannot study large DNA fragment, but if shorter fragment can form a stable dsDNA, then why question the ability of longer complementary DNAs to form an even more stable duplex?

Another crucial evidence that DNA form stable dsDNA is to see how PCR works. Right now every biotechnology lab. uses PCR to amplify a certain dsDNA fragment. Does the author know why PCR needs to be carried out in several different temperatures? This is simply due to the reason that dsDNA needs to be dissociated into ssDNA to enable primers to find its binding partner. After that, the temperature has to be cooled down to form partial dsDNA for the synthesis of second DNA strand. Then temperature needs to be risen again to melt the dsDNA for another primer to bind to restart the synthesis of the third cycle. Thus the requirement of different temperatures in PCR means that DNA exists in ssDNA and dsDNA forms at different temperatures alternatively. Since everybody is working on PCR and is very happy about this technology, I am sure everybody will agree that dsDNA stably exist in solution.

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