

Selective deuteration studies of DNA: new results from D19 and the Deuteration Laboratory

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X-ray fibre diffraction methods have provided a major contribution to our understanding of a wide variety of biological polymers. However they are less effective for study of location of water and hydrogen atoms. Here neutron methods can provide vital information. The ability to deuterate the biopolymers either throughout the entire molecule or in a more specific way adds a powerful dimension to work aimed at investigating hydration patterns or hydrogen positions and changes that occur during water-driven transitions.

This presentation will describe neutron fibre diffraction experiments that have just been carried out on instrument D19 at the ILL using samples of selectively deuterated DNA made in the Deuteration Laboratory. This type of experiment offers a completely different approach in structure determination and validation.