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Study of the acridine labelled short DNA-duplexes by means of rotational depolarization of fluorescence ALEXEY CHUGREEV, Texas A&M University, ALEXANDER OGRODNIK, Technical University of Munich — Dye-DNA compounds have attracted much interest in the quest of potentialities for cancer treatment and serve as very versatile workbenches for exploring the basics of molecular wire technology. For such studies exact positioning of a dye within the sequence is crucial, and can be achieved by a flexible covalent link. Proper intercalation of such a dye can be tested by monitoring the inclination angle of the transition moment with the spinning axis of short DNA double helices by means of rotational depolarization of the dye fluorescence. For 9-amino-6-chloro-2-methoxyacridine attached with a tetramethylene linker at an abasic L-threoninol site we found this angle to be larger than 70 degrees. Since the fluorescence is quantitatively quenched in sequences with guanine neighboring the linker site, these results suggest complete intercalation of the dye.

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