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**Polyamine structural effects on the induction and stabilization of liquid crystalline DNA : potential applications to DNA packaging, gene therapy and polyamine therapeutics**

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DNA undergoes condensation, conformational transitions, aggregation and resolubilization in the presence of polyamines, positively charged organic molecules present in all cells. Under carefully controlled environmental conditions, DNA can also transform to a liquid crystalline state in vitro. We undertook the present work to examine the ability of spermidine, N4-methylspermidine, spermine, N1-acetylspermine and a group of tetramine, pentamine and hexamine analogs of spermine to induce and stabilize liquidcrystalline DNA. Liquid crystalline texture were identified under a polarizing microscope. In the absence or presence of polyamines affected to calf thymus DNA. Results showed a structural specificity effect of polyamines on liquid crystalline phase transitions of DNA and suggest a possible physiological function of natural polyamines.