

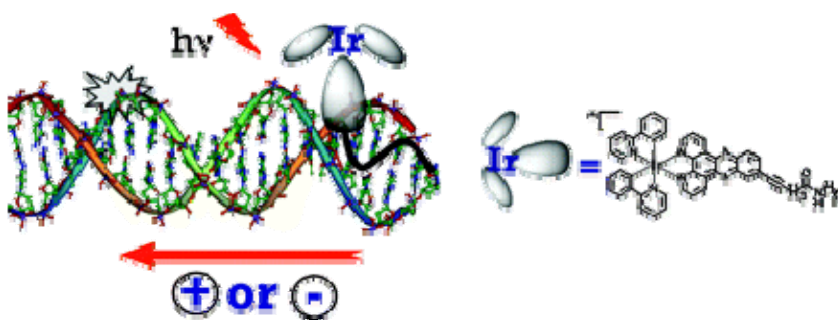
Charge Migration along the DNA Duplex: Hole versus Electron Transport

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Received November 15, 2007



Abstract:

Cyclometalated Ir(III) complexes tethered to 18-mer oligonucleotides through a functionalized dipyrrophenazine ligand have been used to study the distance dependence profile of hole and electron transport along DNA. These DNA assemblies allow a direct comparison of hole and electron transport with a single donor coupled into the base stack. Interestingly, both processes, monitored with modified bases as hole or electron kinetic traps incorporated in the strands, appear to have similarly shallow dependences in their reactions with distance. As with hole transport, perturbations to the base stack also attenuate electron transport.