Anti-Hepatitis B Virus Activity of New Pyrimidine and Adenine Peptide Nucleic Acid Analogues

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A number of *N*-substituted thymine and adenine derivatives, **2a**, **b** and **3a**, **b**, were synthesized by the coupling reaction of 1-bromo-2,2-diethoxyethane with the corresponding base. The corresponding peptide nucleic acid (PNA) analogues, *N*-substituted ethylamino-3-hydroxypropanoate derivatives **5a**, **b** and ethylamino-3-hydroxybutanoate derivatives **6a**, **b**, were synthesized from the corresponding 2-[3,4-dihydro-5-methyl-2,4-dioxopyrimidin-1(2*H*)-yl]-acetaldehyde (**3a**) and 2-[6-amino-4*H*-purin-9(5*H*)-yl]-acetaldehyde (**3b**), respectively. The synthesized compounds were tested for their antiviral activity against hepatitis B virus (HBV). The plaque reduction infectivity assay was used to determine the virus count reduction as a result of the treatment with the tested compounds.

Key words: Peptide Nucleic Acid Analogues, Adenine and Thymine Nucleobases, Anti-Hepatitis B Virus