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RESEARCH ABSTRACT FORM

TITLE: Solid Phase Synthesis of Nucleoside Analogues: Synthesis of a Linker

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Nucleoside analogues play a key role in molecular metabolism. These nucleosides interact with a variety of proteins in biological systems. The synthesis of nucleosides has been found to play a key role in the development of antiviral therapies over years and many of these molecules exhibit antiproliferative, antimicrobial, and antifungal properties. Employing the technique of solid phase synthesis, multi step experiments are carried out to synthesize these analogues of nucleosides. In order to synthesize nucleoside on the solid phase, the nucleoside is covalently attached to a "linker", and the linker-nucleoside complex is attached to a polymer. At completion of the synthesis, the bond between the linker and the nucleoside is broken, and the modified nucleoside is released. My project is to synthesize a linker. To do so, 4-hydroxy benzaldehyde was reacted with ethyl-6-bromohexanoate to give the aldehyde (6-(4-formyl-phenoxy)-hexanoic acid ethyl ester). The aldehyde was next converted to the dimethoxyacetal (6-(4-dimethoxymethyl-phenoxy)-hexanoic-acid-ethyl-ester). These reactions were carried out in several scales thus improving purity, yield and efficiency.