

Supplementary Information

Synthetic studies on the preparation of nucleoside 5'-H-phosphonate monoesters under the Mitsunobu reaction conditions

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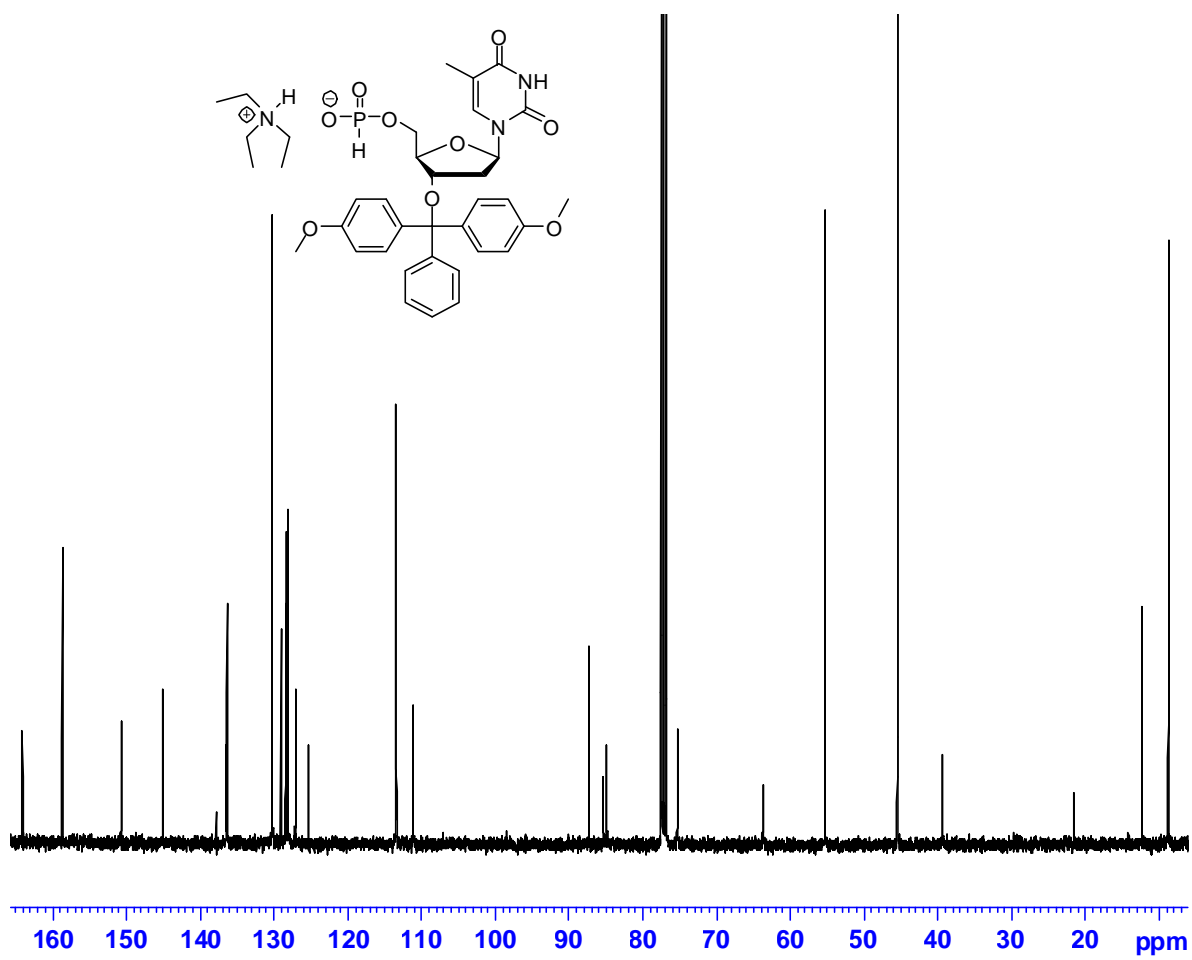
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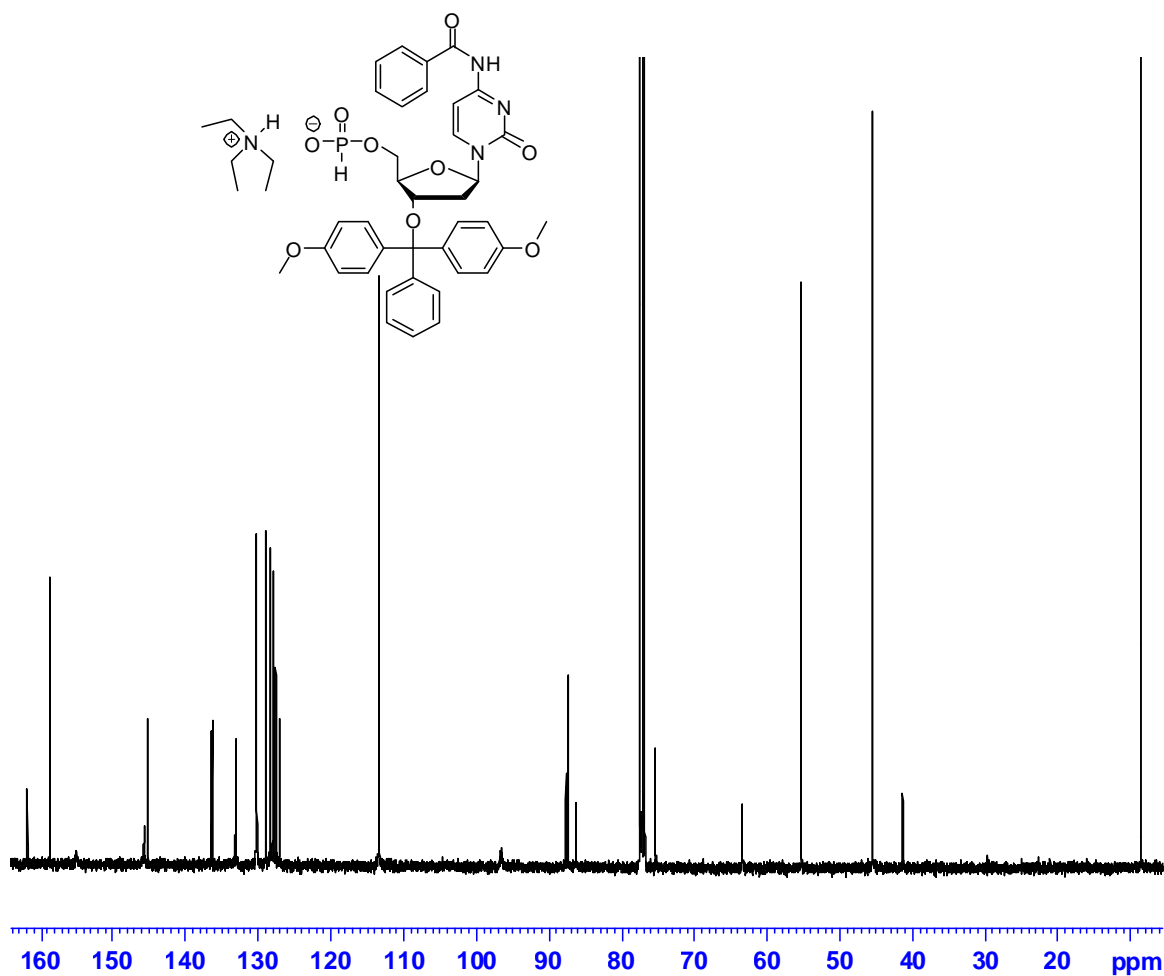
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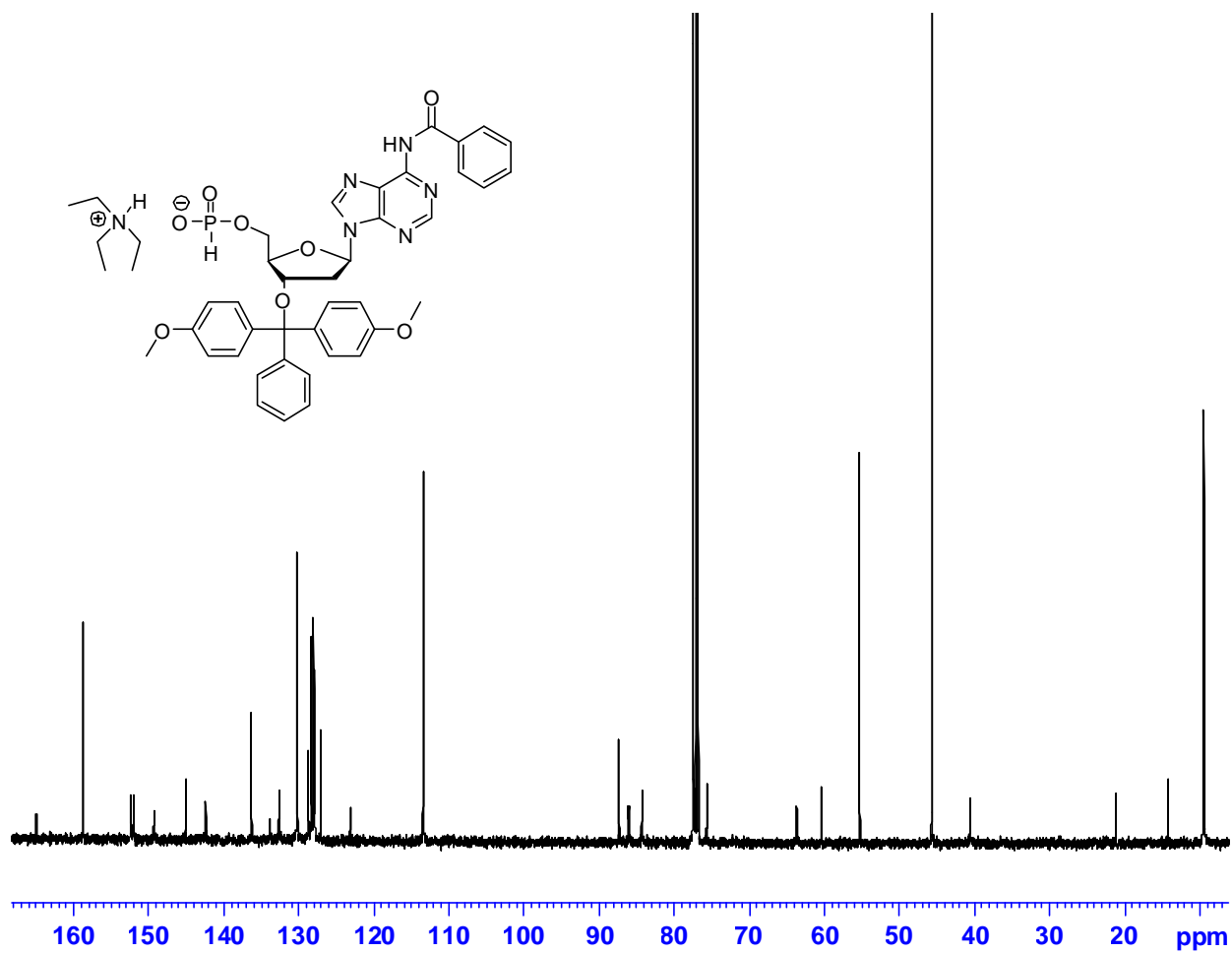
1. 3'-O-(4,4-Dimethoxytrityl)thymidin-5'-yl H-phosphonate, triethylammonium salt (**2a**). S2
2. 3'-O-(4,4-Dimethoxytrityl)-N⁴-benzoyldeoxycytidin-5'-yl H-phosphonate, triethylammonium salt, triethylammonium salt (**2b**). S3
3. 3'-O-(4,4-Dimethoxytrityl)-N⁶-benzoyldeoxyadenosin-5'-yl H-phosphonate, triethylammonium salt (**2c**). S4
4. 3'-O-(4,4-Dimethoxytrityl)-N²-isobutyryldeoxyguanosin-5'-yl H-phosphonate, triethylammonium salt (**2d**). S5



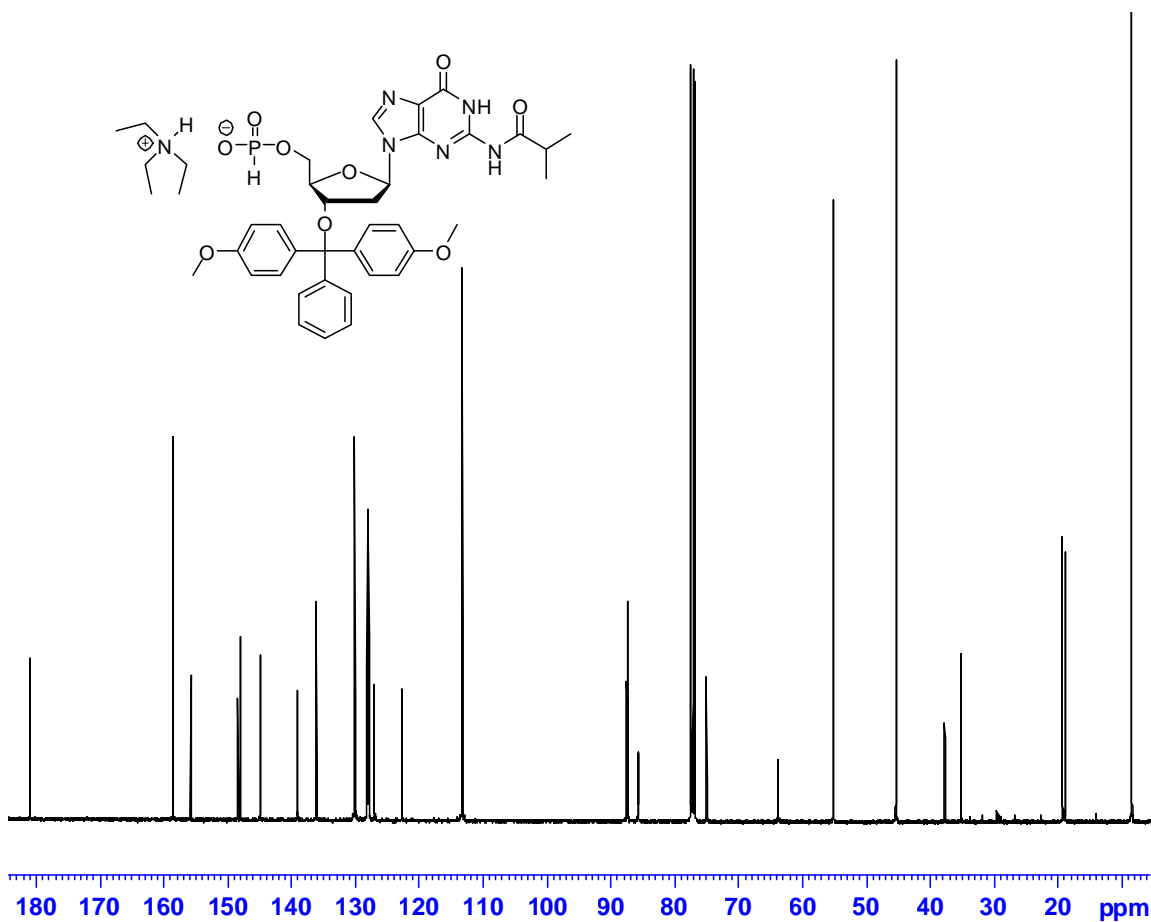
Scheme 1. 3'-O-(4,4-Dimethoxytrityl)thymidin-5'-yl H-phosphonate, triethylammonium salt (2a).



Scheme 2. 3'-O-(4,4-Dimethoxytrityl)-N⁴-benzoyldeoxycytidin-5'-yl H-phosphonate, triethylammonium salt, triethylammonium salt (**2b**).



Scheme 3. 3'-O-(4,4-Dimethoxytrityl)-N⁶-benzoyldeoxyadenosin-5'-yl H-phosphate, triethylammonium salt (**2c**).



Scheme 4. 3'-*O*-(4,4-Dimethoxytrityl)-*N*²-isobutyldeoxyguanosin-5'-yl H-phosphonate, triethylammonium salt (**2d**).

TLC system: Chloroform : Methanol 9:1

3'-*O*-(4,4-Dimethoxytrityl)thymidin-5'-yl H-phosphonate, triethylammonium salt (**2a**).
R_f = 0.975

3'-*O*-(4,4-Dimethoxytrityl)-*N*⁴-benzoyldeoxycytidin-5'-yl H-phosphonate, triethylammonium salt, triethylammonium salt (**2b**).
R_f = 0.90

3'-*O*-(4,4-Dimethoxytrityl)-*N*⁶-benzoyldeoxyadenosin-5'-yl H-phosphonate, triethylammonium salt (**2c**).
R_f = 0.95

3'-*O*-(4,4-Dimethoxytrityl)-*N*²-isobutyldeoxyguanosin-5'-yl H-phosphonate, triethylammonium salt (**2d**).
R_f = 0.95