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A P(V) Platform for Oligonucleotide Synthesis
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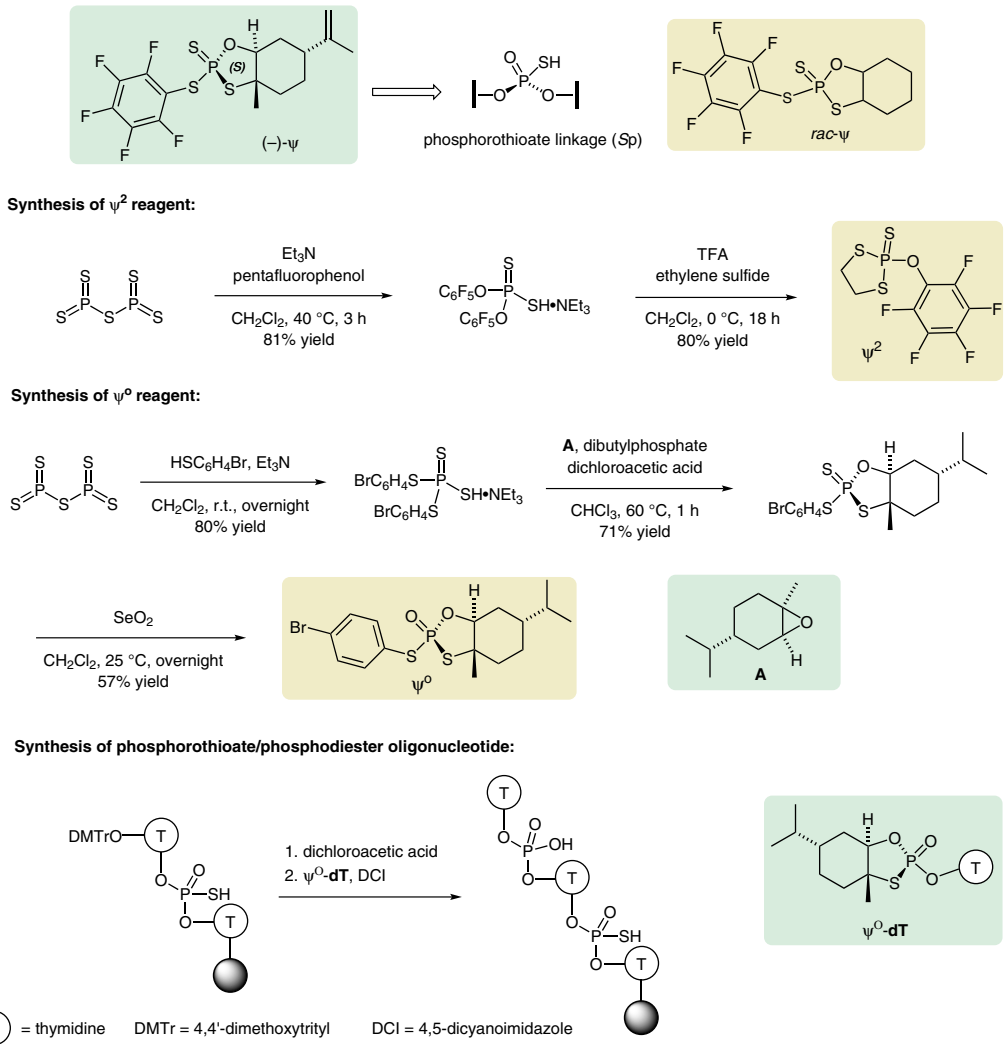
On-Demand Synthesis of Modified Oligonucleotides



Significance: Oligonucleotides with unnatural phosphate linkages have emerged as promising drug candidates due to their desirable pharmacological properties. Accordingly, many FDA approvals have been issued for therapeutic oligonucleotides in the last years. Their synthesis, however, is challenging using existing methods.

Comment: Based on the phosphorous sulfur incorporation (PSI or ψ) reagent for the synthesis of optically pure phosphorothioates (*Science* **2018**, *361*, 1234), the researchers developed three new reagents for the synthesis of racemic phosphorothioates (*rac*-ψ), phosphorodithioates ($ψ^2$), and phosphate diester ($ψ^O$) linkages.

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Category
Chemistry in Medicine and Biology

Key words
P(V) chemistry
phosphate-based linkages
phosphorothioates
phosphorodithioates
phosphate diesters