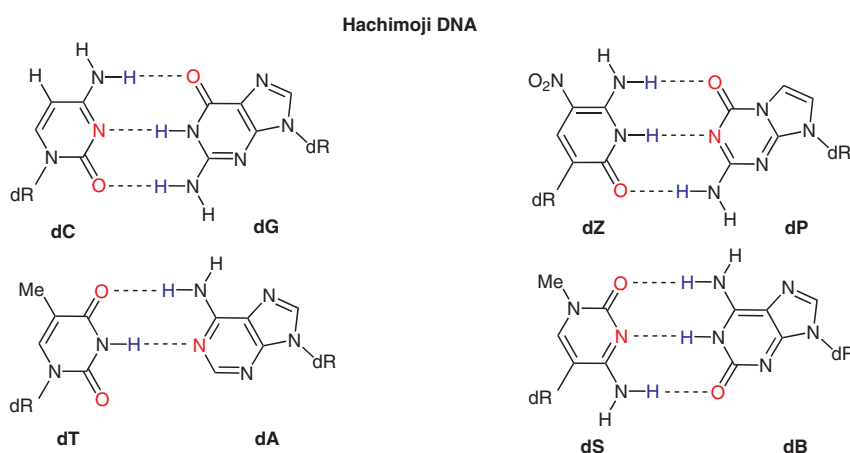


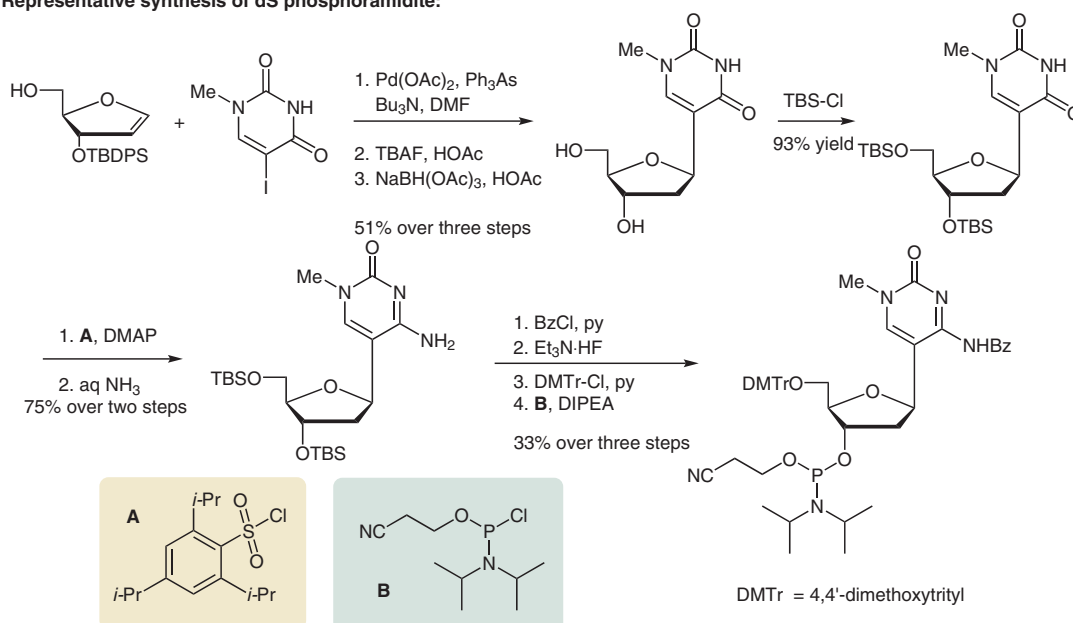
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Hachimoji DNA and RNA: A Genetic System with Eight Building Blocks
Science **2019**, *363*, 884–887.

Four New DNA Building Blocks



Representative synthesis of dS phosphoramidite:



Significance: An artificial genetic system, hachimoji DNA (from Japanese ‘eight letters’) has been obtained using novel nucleotides P, B, Z, and S in combination with standard nucleotides. Hachimoji DNA builds structures with properties similar to those of natural DNA and can be transcribed into hachimoji RNA.

Comment: The synthesis of hachimoji DNA involves the novel purines P and B and the pyrimidines Z and S analogues. The representative synthesis of dS phosphoramidite was reported previously by Benner and co-workers in *Bioorg. Med. Chem.* **2009**, *17*, 3728.

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