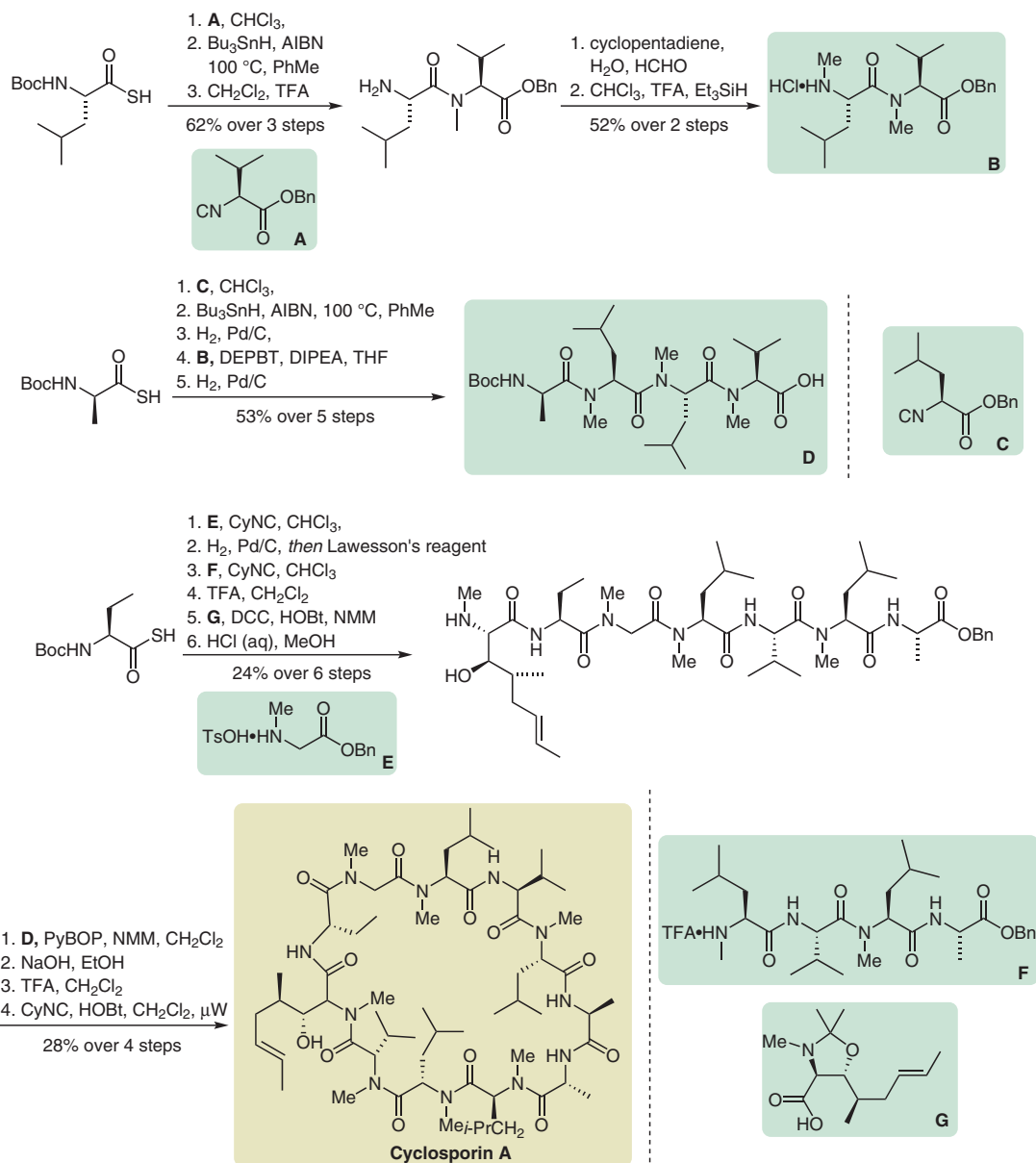


Isonitrile Couplings Enable a Modular Synthesis of Cyclosporin A



Significance: Cyclosporin A is a reversible inhibitor of cytokines in T helper cells. Clinically, it is used as an immunosuppressant, allowing for otherwise non-sustainable organ transplants. Additionally, it is used to treat rheumatoid arthritis and Crohn's disease.

Comment: Novel isonitrile couplings were used to form peptide bonds. A nucleophilic addition yielded a thioformimidate mixed anhydride, which underwent a 1,3-O→N acyl shift to generate an N-thioformyl amide.