

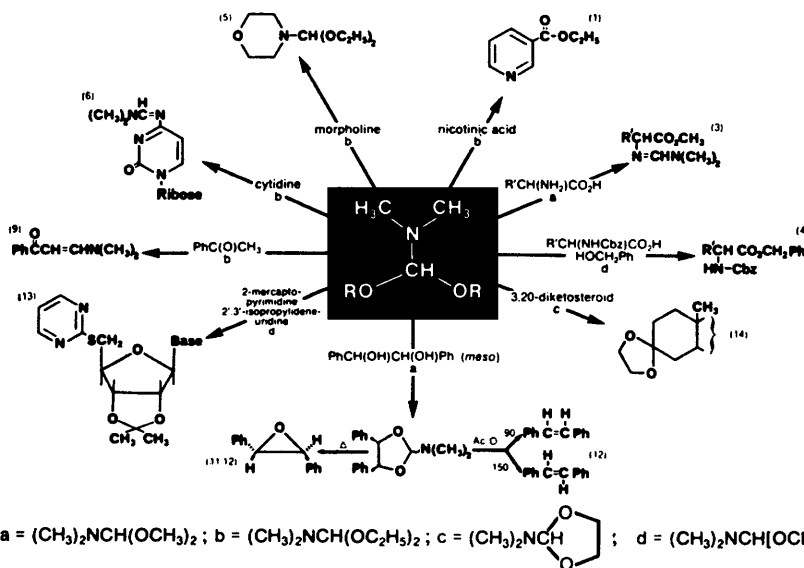
DMF ACETALS

A most versatile class of synthetic and analytical reagents

DMF acetals constitute a class of versatile synthetic and analytical reagents. With these acetals, carboxylic acids at room temperature give directly the corresponding esters;^{1,2,3} amino acids form *N*-dimethylaminomethylene esters, suitable for glc analysis.³ With DMF dineopentyl acetal, which is itself unreactive toward carboxylic acids but acts as a mediator, *N*-protected amino acids can be esterified with a wide variety of alcohols.^{2,4} DMF acetals react with primary amino functions to yield *N*-dimethylaminomethylene derivatives.^{5,6,7} The *N*-dimethylaminomethylene derivative of 9- β -D-arabinofuranosyladenine has anti-viral properties.⁸ DMF acetals react with active methylene

compounds such as acetophenone, ethyl cyanoacetate, 2-methylquinoline methiodide, etc.^{5,9,10} Vicinal diols, e.g., racemic and *meso*-diphenylethane-1,2-diol, cyclohexane-1,2-diol and 5 α , 6 β -dihydroxycholestane, are converted to epoxides and olefins.^{11,12} The conversion of a nucleoside primary alcohol to a sulfide using DMF dineopentyl acetal has been reported. Raney nickel desulfurization gave the 5'-deoxy derivative.¹³

Many other reactions of DMF acetals are documented in our technical information bulletin which is available on request.



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