〔Chem. Pharm. Bull., **39**, 2702-2705 (1991)〕 [Lab. of Medicinal Chemistry]

Conversion of D-Glucose into the β-Hydroxy-δ-lactone Moiety of Mevinic Acids and Congeners *via* D-Idose as a Key Chiral Intermediate.

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(*4R, 6S*)-4-Hydroxy-6-hydroxymethyl-3,4,5,6-tetrahydro-*2H*-pyran-2-one and (*4R, 6S*)-4-hydroxy-6-hydroxymethyl-2-methoxytetrahydropyran, chirons of the β-hydroxy-δ-lactone moiety of mevinic acids [*i.e.*, mevastatin and lovastatin; potent inhibitors of 3-hydroxy-3-methylglutaryl coenzyme A (HMGA-CoA) reductase which is one of enzymes responsible for the early steps of cholesterol biosynthesis] and congeners, were derived from 1,2,3,6-tetra-*O*-acetyl-α-D-idose, which is easily available from penta-*O*-acetyl-β-D-glucose.

〔J. Org. Chem., **56**, 6302-6306 (1991)〕 [Lab. of Medicinal Chemistry]

Mechanistic Aspects of the Oxidation of 1,3-Disubstituted 6-Amino-5-nitrosouracils with Lead Tetraacetate: The Formation of Pyrimido-[5,4-*g*] pteridinetetrone 10-Oxides.

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Lead tetraacetate oxidation of 1,3-disubstituted 6-amino-5-nitrosouracils (**1**) in glacial acetic acid resulted in the smooth formation of the corresponding 1,3,6,8-tetrasubstituted pyrimido[5,4-*g*]pteridine-2,4,5,7(*1H,3H,6H,8H*)-tetrone 10-oxides (**2**), along with minor amounts of 4,6-disubstituted furazano [3,4-d]-pyrimidine-5,7(*4H,6H*)-diones. ESR studies and a number of chemical observations suggest a novel reaction sequence for the formation of (**2**), which involves oxidative dimerization of (**1**) followed by intramolecular cyclization, oxidation, and homolytic elimination of nitrous oxide.

〔J. Chem. Soc., Perkin Trans.1, 2675-2677 (**1991**)〕 [Lab. of Medicinal Chemistry]

A Versatile and Convenient Method for the Syntheses of Pyrimido-[4,5-*b*] [1,4]-thiazine and -thiazepine Ring Systems.

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Treatment of 5-hydroxyuracil and 5-hydroxyisocytosine with *N*-bromosuccinimide in ethanol followed by the thermal condensation with β- and γ-amino thiols such as 2-aminothiophenol, cysteamine, *L*-cysteine, and *D,L*-homocysteine resulted in the formation of the corresponding pyrimido [4,5-*b*] [1,4] thiazin-4 (*3H*)-ones and pyrimido [4,5-*b*] [1,4] thiazepin-4 (*3H*)-ones. The present new method for the construction of pyrimido-[4,5-*b*] [1,4]-thiazine and -thiazepine ring systems was shown to involve the condensation of 5,6-diethoxy-5-hydroxy-5,6-dihydropyrimidin-4 (*3H*)-one intermediate with the β- and γ-amino thiols which is accelerated in the presence of acid-catalyst.