

[J. Chem. Soc., Perkin Trans. I, 2513 (1989)]

Palladium-Catalyzed Cross-Coupling Reaction of Trialkylaluminiums with Aryl Triflates : Facile Conversion of a Phenolic Hydroxy Group into an Alkyl Group

KOSAKU HIROTA,* YOSHIKI ISOBE, and YOSHIFUMI MAKI

Aryl Triflates, prepared by treatment of aromatic hydroxy compounds with trifluoromethanesulfonic anhydride, were heated with trialkylaluminiums (e.g. AlMe_3 , AlPr_3 , AlBu^i_3) in the presence of tetrakis (triphenylphosphine) palladium in dry tetrahydrofuran under a nitrogen atmosphere to give the corresponding alkylarenes in high yields. This cross-coupling reaction provides a convenient method for the conversion of a phenolic hydroxy group into an alkyl group.

[Chem. Pharm. Bull., 37, 2008 (1989)]

Rearrangement of 5-Cyanouracils into 6-Aminouracils by Reaction with Amines and Hydroxide Ion

KOSAKU HIROTA,* HIRONAO SAJIKI, YUKIO KITADE, and YOSHIFUMI MAKI

Treatment of 3-substituted 5-cyano-1-phenyluracil derivatives with alkylamines afforded 3-substituted 5-(N-alkyliminomethyl)-6-amino-1-phenyluracils *via* rearrangement involving ring-opening and ring-closure processes. Upon reaction of 3-unsubstituted 5-cyano-1-phenyluracil with methylamine and ammonia, ring-opening products, 3-acyloyl-1-phenylureas were isolated as reaction intermediates and recycled with ease to 6-aminouracils. In the present rearrangement, the N_1 -phenyl groups of uracils would facilitate the cleavage of the $\text{N}_1\text{-C}_6$ bond by attack of alkylamine on the 6-position. Employment of sodium hydroxide instead of amines caused analogous rearrangement to give 6-amino-5-formyluracils.

[Chem. Pharm. Bull., 37, 3239 (1989)]

Photooxidative Decarboxylation of Indole-3-acetic Acid by Pyrimido-[5,4-g] pteridine N-Oxide as a Biomimetic Reaction.

YOSHIFUMI MAKI,* IWAO OYABU, SEIJI OHARA, MAGOICHI SAKO,
YUKIO KITADE, KOSAKU HIROTA

Indole-3-acetic acid (1), a plant growth hormone, is metabolized in plants to give various oxidation products. One of the metabolic pathways is the photochemical or enzymatic transformation of 1 to indole-3-carboxaldehyde (2) involving the oxidative decarboxylation of 1. The acid (1) underwent photo-oxidative decarboxylation by pyrimido [5,4-g] pteridine N-oxide involving a single-electron transfer process under anaerobic conditions to give 2 as the major product *via* an intermediary formation of indole-3-methanol. The present oxidation-mode was regarded as a simple chemical mimic of the photochemical or enzymatic transformation of 1 to 2.