

THE SYNTHESIS OF TWO NEW TYPES OF N,N-DISUBSTITUTED ADENINES:
THE USE OF METHOXYL GROUP AS A DIRECTING GROUP
IN N-ALKYLATION OF ADENINE RING

Tozo Fujii, Fumiko Tanaka, Kazuyo Mohri, Taisuke Itaya, and Tohru Saito

Faculty of Pharmaceutical Sciences, Kanazawa University,

Takara, Kanazawa 920

One of the hitherto unknown N,N-disubstituted adenines, 3,9-dialkyladenine, was synthesized from N'-alkoxy-1-alkyl-5-formamidoimidazole-4-carboxamide by reduction with LiAlH_4 followed by cyclization with ethyl orthoformate and removal of the alkoxyl group by catalytic hydrogenolysis. One other new type of N,N-disubstituted adenine, 7,9-dimethyladenine perchlorate, was also prepared by methylation of N⁶-methoxy-9-methyladenine (I) followed by hydrogenolysis of the resulting N⁶-methoxy-7,9-dimethyladenine salt. The N⁶-methylation of I to give N⁶-methoxy-N⁶,9-dimethyladenine hydriodide was found to occur concomitantly in this reaction. The methylation was extended to include N⁶-methoxyadenosine.