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

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One of the hitherto unknown N,N-disubstituted adenines, 3,9-dialkyladenine, was synthesized from N'-alkoxy-1-alkyl-5-formamidoimidazole-4-carboxamidine 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 N^6-methoxy-9-methyladenine (I) followed by hydrogenolysis of the resulting N^6-methoxy-7,9-dimethyladenine salt. The N^6-methylation of I to give N^6-methoxy-N^6,9-dimethyladenine hydriodide was found to occur concomitantly in this reaction. The methylation was extended to include N^6-methoxyadenosine.