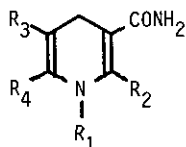


ON THE SYNTHESIS, REDUCING AND SPECTROSCOPIC PROPERTIES OF METHYL-SUBSTITUTED
1,4-DIHYDRONICOTINAMIDES.

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In the investigation of the reducing properties of 1,4-dihydropyridines as theoretical model compounds of NADH (ref 1 and 2), we here report on the synthesis of a series of N-substituted 3-carbamoyl-methyl-1,4-dihydronicotinamides I to XII. The reduction of the pyridinium salts I to XII with sodium dithionite to the corresponding 1,4-dihydropyridines was only succesfull for salts I, V and VII to XII. The 1,4-dihydropyridines of the compounds II to IV and VI could not be isolated, probably due to their instability.



I: $R_1=CH_3, R_2=R_3=R_4=H$

II: $R_1=R_2=CH_3, R_3=R_4=H$

III: $R_1=R_3=CH_3, R_2=R_4=H$

IV: $R_1=R_4=CH_3, R_2=R_3=H$

V: $R_1=Bn, R_2=R_3=R_4=H$

VI: $R_1=Bn, R_2=CH_3, R_3=R_4=H$

VII: $R_1=Bn, R_3=CH_3, R_2=R_4=H$

VIII: $R_1=Bn, R_4=CH_3, R_2=R_3=H$

IX: $R_1=DCB, R_2=R_3=R_4=H$

X: $R_1=DCB, R_2=CH_3, R_3=R_4=H$

XI: $R_1=DCB, R_3=CH_3, R_2=R_4=H$

XII: $R_1=DCB, R_4=CH_3, R_2=R_3=H$

Bn = Benzyl, DCB = 2,6-dichlorobenzyl

Structures of all isolated compounds was confirmed by both 1H -NMR and ^{13}C -NMR spectroscopy.

A compilation of these results will also be presented together with some kinetic data illustrating the reactivity towards an activated ketone.

References :

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2. J.P. Samama, Ph.D.-thesis, Université Louis Pasteur (Strasbourg, France) '79