N-Dimethylphosphinoyl-substituted Aminomethanephosphonic Acids

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Dedicated to Professor Vadim A. Davankov on the occasion of his 70th birthday

Three new *N*-phosphinoyl-substituted aminomethanephosphonic acids have been synthesized and characterized: dimethylphosphinoylmethyl-imino-bis(methanephosphonic acid) (**1**), [3-(dimethylphosphinoyl)-propyl]-imino-bis(methanephosphonic acid) (**2**), and *N*-benzyl-*N*-dimethylphosphinoylmethyl-aminomethanephosphonic acid (**3**). The latter was isolated as a hydrochloride **3** · **HCl**. The acids have been prepared *via* Moedritzer-Irani reaction from the corresponding dimethylphosphinoyl-substituted primary and secondary aliphatic amines. Their structures have been confirmed by elemental analysis, IR, ^{1}H, ^{31}P{^{1}H}, ^{13}C{^{1}H} NMR spectroscopy, electrospray ionization mass spectrometry, and single-crystal X-ray diffraction.

Key words: Phosphinoyl-substituted Aminomethanephosphonic Acids, Moedritzer-Irani Reaction, Aminophosphonic Acids, X-Ray Diffraction, Electrospray Ionization Mass Spectrometry