Structural Studies on *N*-(2,4,6-Trimethylphenyl)-methyl/ chloro-acetamides, 2,4,6-$(CH_3)_3C_6H_2NH$-CO-$CH_{3-y}X_y$ (X = CH_3 or Cl and y = 0, 1, 2)

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The effect of substitutions in the ring and in the side chain on the crystal structure of *N*-(2,4,6-trimethylphenyl)-methyl/chloro-acetamides of the configuration 2,4,6-$(CH_3)_3C_6H_2NH$-CO-$CH_{3-y}X_y$ (X = CH_3 or Cl and $y = 0, 1, 2$) has been studied by determining the crystal structures of *N*-(2,4,6-trimethylphenyl)-acetamide, 2,4,6-$(CH_3)_3C_6H_2NH$-CO-CH_3 (**TMPA**); *N*-(2,4,6-trimethylphenyl)-2-methylacetamide, 2,4,6-$(CH_3)_3C_6H_2NH$-CO-CH_2CH_3 (**TMPMA**); *N*-(2,4,6-trimethylphenyl)-2,2-dimethylacetamide, 2,4,6-$(CH_3)_3C_6H_2NH$-CO-$CH(CH_3)_2$ (**TMPDMA**) and *N*-(2,4,6-trimethylphenyl)-2,2-dichloroacetamide, 2,4,6-$(CH_3)_3C_6H_2NH$-CO-$CHCl_2$ (**TMPDCA**). The crystallographic system, space group, formula units and lattice constants in Å are: **TMPA**: monoclinic, *Pn*, $Z = 2$, $a = 8.142(3)$, $b = 8.469(3)$, $c = 8.223(3)$, $\beta = 113.61(2)^\circ$; **TMPMA**: monoclinic, $P2_1/n$, $Z = 8$, $a = 9.103(1)$, $b = 15.812(2)$, $c = 16.4787(19)$, $\alpha = 89.974(10)^\circ$, $\beta = 96.951(10)^\circ$, $\gamma = 89.967(10)^\circ$; **TMPDMA**: monoclinic, $P2_1/c$, $Z = 4$, $a = 4.757(1)$, $b = 24.644(4)$, $c = 10.785(2)$, $\beta = 99.647(17)^\circ$; **TMPDCA**: triclinic, $P1$, $Z = 2$, $a = 4.652(1)$, $b = 11.006(1)$, $c = 12.369(1)$, $\alpha = 82.521(7)^\circ$, $\beta = 83.09(1)^\circ$, $\gamma = 79.84(1)^\circ$. The results are analyzed along with the structural data of *N*-phenylacetamide, C_6H_5NH-CO-CH_3; *N*-(2,4,6-trimethylphenyl)-2-chloroacetamide, 2,4,6-$(CH_3)_3C_6H_2NH$-CO-CH_2Cl; *N*-(2,4,6-trichlorophenyl)-acetamide, 2,4,6-$Cl_3C_6H_2NH$-CO-CH_3; *N*-(2,4,6-trichlorophenyl)-2-chloroacetamide, 2,4,6-$Cl_3C_6H_2NH$-CO-CH_2Cl; *N*-(2,4,6-trichlorophenyl)-2,2-dichloroacetamide, 2,4,6-$Cl_3C_6H_2NH$-CO-$CHCl_2$ and *N*-(2,4,6-trichlorophenyl)-2,2,2-trichloroacetamide, 2,4,6-$Cl_3C_6H_2NH$-CO-CCl_3. **TMPA**, **TMPMA** and **TMPDCA** have one molecule each in their asymmetric units, while **TMPDMA** has two molecules in its asymmetric unit. Changes in the mean ring distances are smaller on substitution as the effect has to be transmitted through the peptide linkage. The comparison of the other bond parameters reveal that there are significant changes in them on substitution.

Key words: Crystal Structures; *N*-(2,4,6-Trimethylphenyl)-methyl/chloro-acetamides.