Methanolysis as a Route to Gallium(III) Clusters: Synthesis and Structural Characterization of a Decanuclear Molecular Wheel

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Synthesis of $[Ga(OMe)_2\{O_2CC(OH)Ph_2\}]_{10}\cdot 2MeOH\cdot 0.5H_2O$. Solid $Ga(NO_3)_3\cdot 9H_2O$ (0.17 g, 0.4 mmol) was dissolved under stirring in a clear solution of $LiOH\cdot H_2O$ (0.042 g, 1.0 mmol) and benzilic acid (0.092 g, 0.4 mmol) in MeOH (10 mL). The clear colorless solution was closed and left undisturbed at room temperature for a period of a week, during which time colorless crystals of X-ray quality formed. The crystals were collected by vacuum filtration, washed with MeOH (5 × 5 mL) and dried under vacuumm over $CaCl_2$. Yield: 0.09 g, ca. 60 %. Anal. Calcd for $C_{160}H_{171}O_{50.5}Ga_{10}$ $\{[Ga(OMe)_2\{O_2CC(OH)Ph_2\}]_{10}\cdot 0.5H_2O\}$: C, 53.39; H, 4.79. Found: C, 53.50; H 4.65.

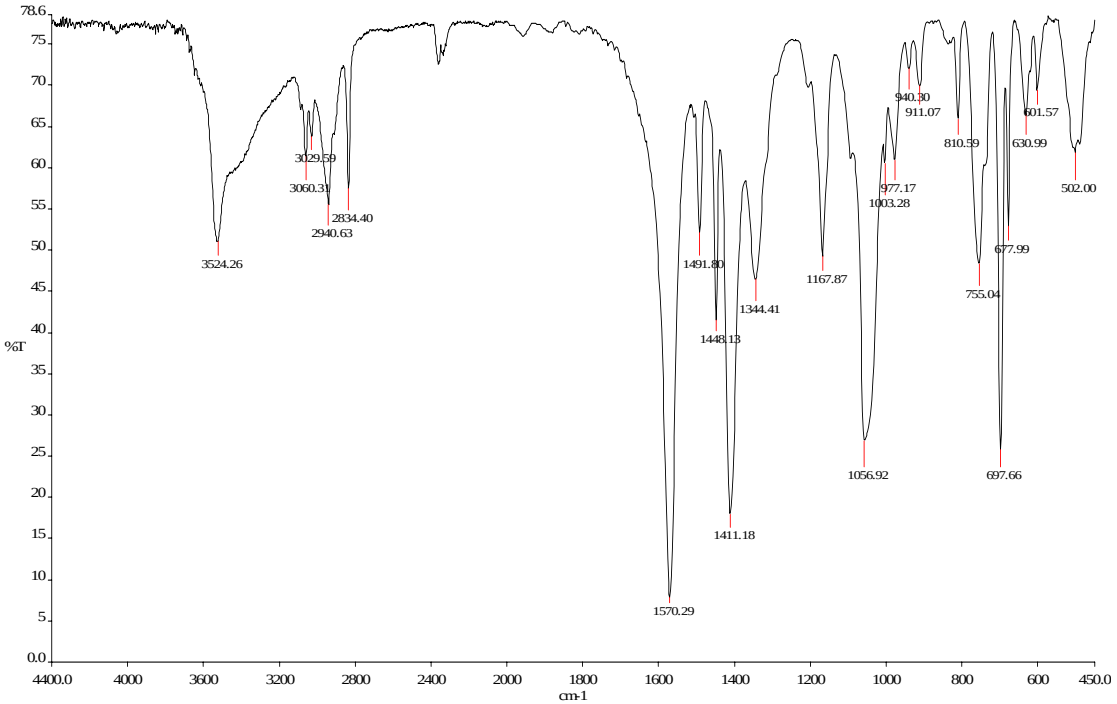

Figure S1. The IR spectrum of $[Ga(OMe)_2\{O_2CC(OH)Ph_2\}]_{10}\cdot 2MeOH\cdot 0.5H_2O$ (KBr pellet) in the 450 – 4400 cm^{-1}.

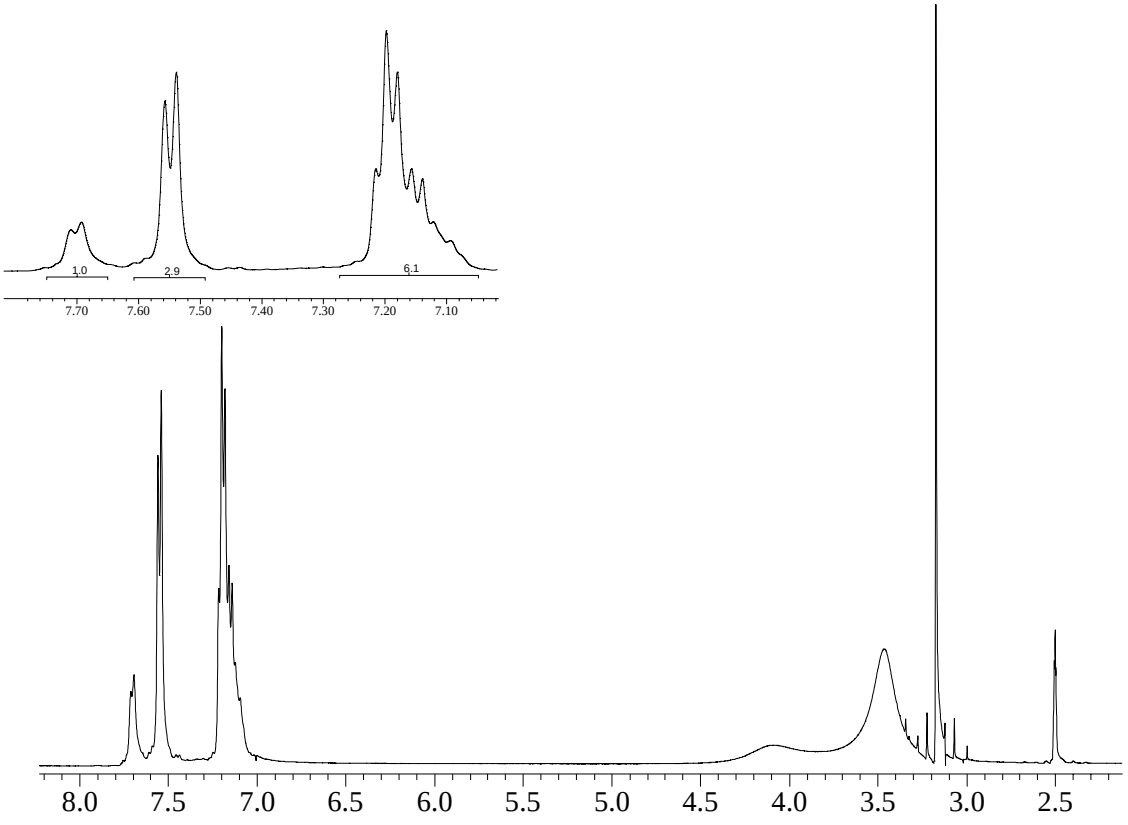

Figure S2. The ^{1}H NMR spectrum of $[Ga(OMe)_2\{O_2CC(OH)Ph_2\}]_{10}\cdot 2MeOH\cdot 0.5H_2O$ in DMSO-d_6.