

Mono- and Binuclear Gold(I) Amido Compounds of Purine Derivatives

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Dedicated to Professor Hubert Schmidbaur on the occasion of his 70th birthday in recognition of his continuing contributions to inorganic and organometallic chemistry

A series of neutral dinuclear and mononuclear gold(I) complexes with phosphine and *N*-bonded 9*H*-purin-9-ate or 9*H*-purin-6-ylamine-9-ate have been synthesised under basic conditions and characterised by gHSQC, ¹H, ¹³C gHMQC and ¹H detected ¹H, ¹⁵N gHMQC experiments in addition to ESI-MS and IR spectroscopy. Intermolecular aurophilic interactions are present in the structures of polymeric 1,2-bis(diphenylphosphine)ethane(9*H*-purin-9-ate)gold(I) **1**, (3.1641(4) Å) and 1,3-bis(diphenylphosphine)propane(9*H*-purin-9-ate)gold(I) **3**, (3.52 Å). The N-Au-P angle in **1** is exceptionally small (166.3(1)°). Intramolecular aurophilic interaction (3.63 Å) complemented by hydrogen bonding dictates the non-oligomeric structure of 1,3-bis(diphenylphosphine)propane(9*H*-purin-6-ylamin-9-ate)gold(I) (**7**). Dimeric aurophilic interactions appear in the structure of (tributylphosphine)(9*H*-purin-9-ate)gold(I) (**11**) (3.2311(7) Å), while the structure in the other mononuclear compound, (triphenylphosphine)(9*H*-purin-9-ate)gold(I) (**9**) is organised by Au...N-interactions.

Key words: Gold(I) Complexes, Aurophilic Interactions, Amido Ligands, 9H-Purine, DNA Base