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## 5-*t*-But-catecholato (DTBcat)-gold-phosphine-complexes: Synthesis and spectral study

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Ag<sup>-</sup> assisted dechlorination of Gold(I) and Gold(III) phosphine complexes followed by the reaction with 5-*t*-but-catecholato (DTBcat)- (H<sub>2</sub>CA) in presence of Et<sub>3</sub>N gives neutral violet complexes, whereas **1-9**, **8a**, **14-16** are Gold(I) two coordinate linear complexes and **10-13** are Gold(III) square planar four coordinate complexes. The seventeen new complexes are characterised by ESI-MS, IR and multinuclear NMR (<sup>1</sup>H, <sup>13</sup>C, <sup>19</sup>F, <sup>31</sup>P) spectroscopic studies. In addition, bi-dimensional NMR studies such as <sup>1</sup>H <sup>1</sup>H COSY permit a complete assignment of the complexes in the solution phase.

**Keywords:** Gold(I), Gold(III), catechol, phosphine, <sup>1</sup>H, <sup>13</sup>C, <sup>19</sup>F, <sup>31</sup>P, COSY, NMR, ESI-MS

The coordination chemistry of gold(I) and gold(III) phosphine complexes followed by the reaction with 5-*t*-but-catecholato (DTBcat)- (H<sub>2</sub>CA) in presence of Et<sub>3</sub>N gives neutral violet complexes, whereas **1-9**, **8a**, **14-16** are Gold(I) two coordinate linear complexes and **10-13** are Gold(III) square planar four coordinate complexes. The seventeen new complexes are characterised by ESI-MS, IR and multinuclear NMR (<sup>1</sup>H, <sup>13</sup>C, <sup>19</sup>F, <sup>31</sup>P) spectroscopic studies. In addition, bi-dimensional NMR studies such as <sup>1</sup>H <sup>1</sup>H COSY permit a complete assignment of the complexes in the solution phase.