

Au(I)-arene Interactions

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Gold(I) chloride complexes catalyze a wide range of reactions, in the presence of different silver(I) salts. In particular alkoxy cyclization and skeletal rearrangement of 1,6-enynes proceed at room temperature with [Au(PPh₃) Cl]/AgSbF₆.^[1] In addition, dienyne and 1,6-enynes with an aryl ring at the alkyne, give [4+2] products in a reaction catalyzed by gold(I) complexes with bulky phosphines.^[2]

In order to avoid the use of silver salts, we have synthesized new cationic complexes with bulky phosphines. The preparation of this new type of gold(I) compounds involves the reaction with AgSbF₆ in different coordinating solvents. When aromatic solvents are used, a new type of complexes are formed, which show an interaction between the arene and the electrophilic metal center. The structures of these new gold(I) complexes have been studied by X-ray diffraction.

[1] Nieto-Oberhuber C., Muñoz M. P., Buñuel E., Nevado C., Cárdenas D.J., Echavarren A.M., *Angew. Chem. Int. Ed.*, 2004, **43**, 2402-2406. [2] Nieto-Oberhuber C., López S., Echavarren A.M., *J. Am. Chem. Soc.*, 2005, **127**, ja04225t.

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