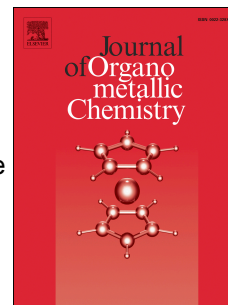


Accepted Manuscript

Medicinal applications of Gold(I/III)-based complexes bearing *N*-Heterocyclic carbene and phosphine ligands

Bruno Dominelli, João D.C. Correia, Fritz E. Kühn



PII: S0022-328X(18)30266-3

DOI: [10.1016/j.jorganchem.2018.04.023](https://doi.org/10.1016/j.jorganchem.2018.04.023)

Reference: JOM 20415

To appear in: *Journal of Organometallic Chemistry*

Received Date: 26 January 2018

Revised Date: 13 April 2018

Accepted Date: 13 April 2018

Please cite this article as: B. Dominelli, João D.C. Correia, F.E. Kühn, Medicinal applications of Gold(I/III)-based complexes bearing *N*-Heterocyclic carbene and phosphine ligands, *Journal of Organometallic Chemistry* (2018), doi: 10.1016/j.jorganchem.2018.04.023.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Medicinal Applications of Gold(I/III)-Based Complexes Bearing *N*-Heterocyclic Carbene and Phosphine Ligands

Bruno Dominelli^a, João D. C. Correia^{b,*} and Fritz E. Kühn^{a,*}

^a Molecular Catalysis, Department of Chemistry, Catalysis Research Center, Technische Universität München, Lichtenbergstr. 4, 85748 Garching, Germany. E-mail: fritz.kuehn@ch.tum.de

^b Centro de Ciências e Tecnologias Nucleares, Instituto Superior Técnico, Universidade de Lisboa, Campus Tecnológico e Nuclear, Estrada Nacional 10 (km 139,7), 2695-066 Bobadela LRS, Portugal

Abstract

Phosphines are the most studied ligands on gold-based metallodrugs, whereas *N*-heterocyclic carbenes (NHCs) have been emerging in the past years as potential alternative ligands for medicinal applications. Indeed, in both cases, phosphine and NHC allow the preparation of a plethora of transition metal-based complexes with attractive properties for medicinal applications. This review offers an update on phosphine and NHC ligands used in gold complexes with potential anti-cancer, anti-bacterial, anti-parasitic (malaria, leishmaniasis and trypanosomiasis) and anti-viral (HIV-1) activity. Structural information about diverse ligands is discussed and the biological activity of the corresponding homo-metallic Au(I), Au(III) and hetero-metallic complexes is summarized in tables and discussed as well. Additionally, these complexes are compared with reference compounds and facts about mechanistic studies and luminescence properties are highlighted. The main target of this review is to find trends in ligand design for medicinal purposes. Particularly, questions about the balance between lipophilicity and hydrophilicity, the presence of functional groups, the utilization of multinuclear complexes and the comparison of neutral versus cationic complexes will be addressed.

Keywords: Gold(I/III) Complexes – *N*-Heterocyclic Carbenes – Phosphines – Medicinal Applications.

Download English Version:

<https://daneshyari.com/en/article/7755978>

Download Persian Version:

<https://daneshyari.com/article/7755978>

[Daneshyari.com](https://daneshyari.com)