

Accepted Manuscript

Research paper

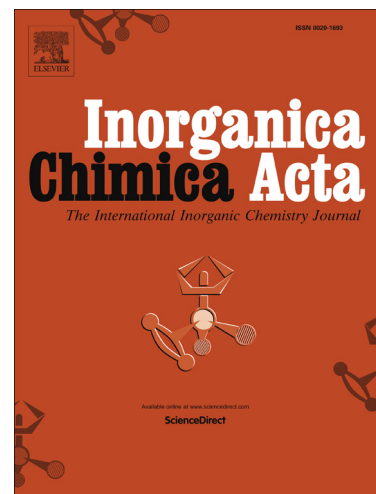
Palladium complexes bearing κ^2 -*N,N* and κ^3 -*N,N,O* pendant amine bis(phenolate) ligands

Brendan J. Graziano, Eric M. Collins, Nathaniel C. McCutcheon, Claire L. Griffith, Nicole M. Braunscheidel, Trilisa M. Perrine, Bradley M. Wile

PII: S0020-1693(18)30921-6
DOI: <https://doi.org/10.1016/j.ica.2018.09.032>
Reference: ICA 18490

To appear in: *Inorganica Chimica Acta*

Received Date: 13 June 2018
Revised Date: 10 September 2018
Accepted Date: 10 September 2018



Please cite this article as: B.J. Graziano, E.M. Collins, N.C. McCutcheon, C.L. Griffith, N.M. Braunscheidel, T.M. Perrine, B.M. Wile, Palladium complexes bearing κ^2 -*N,N* and κ^3 -*N,N,O* pendant amine bis(phenolate) ligands, *Inorganica Chimica Acta* (2018), doi: <https://doi.org/10.1016/j.ica.2018.09.032>

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.

Palladium complexes bearing κ^2 -*N,N* and κ^3 -*N,N,O* pendant amine bis(phenolate) ligands

Graziano, Brendan J.; Collins, Eric M.; McCutcheon, Nathaniel C.; Griffith, Claire L., Braunscheidel, Nicole M.; Perrine, Trilisa M.; Wile, Bradley M.*

Donald J. Bettinger Department of Chemistry and Biochemistry, Ohio Northern University, 525 South Main Street, Ada, OH 45810, USA

*Author to whom correspondence should be addressed: b-wile@onu.edu (419) 772-2986
ORCID ID: [0000-0001-6856-2796](https://orcid.org/0000-0001-6856-2796)

Abstract

The synthesis and characterization of ten new palladium(II) amine bis(phenolate) complexes is reported. Solution and single-crystal X-ray diffraction studies reveal the presence of both κ^2 -*N,N* and κ^3 -*N,N,O* binding modes in these square planar complexes. For complexes with sterically less demanding phenolate donors, addition of external acidic or basic reagents allows for the selective masking of a coordination site at Pd. Complexes bearing bulky cumyl substituents on phenolate donors exhibited unusual ^1H NMR spectroscopic features that are consistent with an anagostic interaction with the palladium center. Computational analysis at the $\omega\text{B97X-D/LAN2LDZ}$ level of theory supported the assertion that such an anagostic interaction may play a role in stabilizing κ^2 complexes bearing a cumyl-substituted amine bis(phenolate) ligand. X-ray crystallographic data for **H21a-PdCl₂**, **H22a-PdCl₂**, **H1b-PdCl**, **H2b-PdCl**, **H1d-PdCl**, and **H1e-PdCl** are reported.

Keywords: Palladium; X-ray; NMR; anagostic

Download English Version:

<https://daneshyari.com/en/article/10154791>

Download Persian Version:

<https://daneshyari.com/article/10154791>

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