



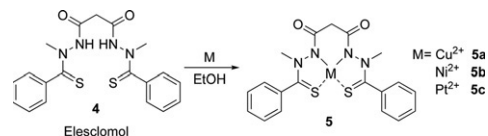
Contents

Arun A. Yadav, Daywin Patel, Xing Wu, Brian B. Hasinoff

Journal of Inorganic Biochemistry 126 (2013) 1–6

Molecular mechanisms of the biological activity of the anticancer drug elesclomol and its complexes with Cu(II), Ni(II) and Pt(II)

The anticancer drug elesclomol strongly binds Cu^{2+} . The redox active Cu^{2+} complex was much more cytotoxic than the redox inactive Ni^{2+} and Pt^{2+} complexes. Thus elesclomol may exert its cytotoxicity through the formation of damaging reactive oxygen species mediated through the reduction and redox cycling of Cu^{2+} .

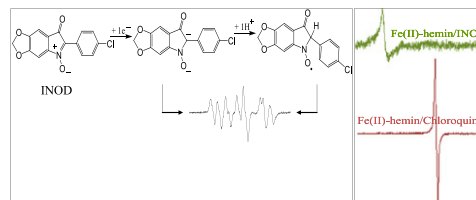


Nguyen Thi Hoang Yen, Hany Ibrahim, Karine Reybier, Pierre Perio, Florence Souard, Ennaji Najahi, Paul-Louis Fabre, Françoise Nepveu

Journal of Inorganic Biochemistry 126 (2013) 7–16

Pro-oxidant properties of indolone-*N*-oxides in relation to their antimalarial properties

Indolone-*N*-oxides (INODs) generate radical intermediates by reduction which may initiate a fatal redox signal within parasitized erythrocytes. This reaction is not iron-dependent. INODs present physico- and bio-chemical properties which are different of those of existing antimalarial drugs to which the parasite has become resistant.

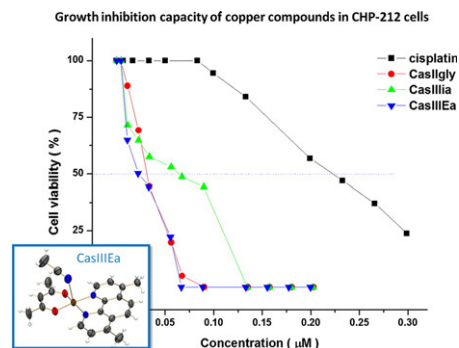


Anllely Grizett Gutiérrez, Adriana Vázquez-Aguirre, Juan Carlos García-Ramos, Marcos Flores-Alamo, Enrique Hernández-Lemus, Lena Ruiz-Azuara, Carmen Mejía

Journal of Inorganic Biochemistry 126 (2013) 17–25

Copper(II) mixed chelate compounds induce apoptosis through reactive oxygen species in neuroblastoma cell line CHP-212

Copper(II) coordination compounds Casiopeínas® cell growth inhibition on stromal neuroblastoma human cell line CHP-212. **CasIIIeA** has shown a 12 times increment of growth cell inhibition capacity compared with the commonly used drug, cisplatin.

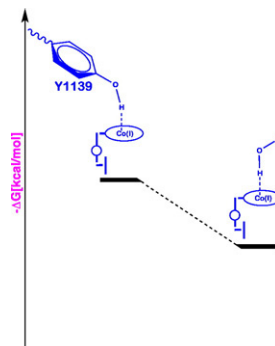


Manoj Kumar, Pawel M. Kozlowski

Journal of Inorganic Biochemistry 126 (2013) 26–34

Can the local enzyme scaffold act as an H-donor for a Co(I)–H bond formation? The curious case of methionine synthase-bound cob(II)alamin

The density functional calculations suggest that the Y1139 residue of methionine synthase (MetH) enzyme forms a stronger Co(I)–H interaction than the β -axial H₂O ligand. The analysis of the X-ray crystallographic data also indicates that the Y1139 residue in the MetH-bound cobalamin may be the actual β -axial ligand rather than the H₂O.

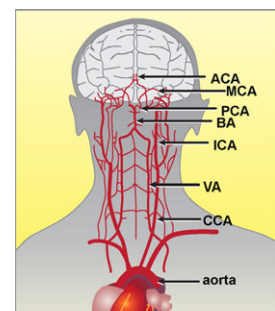


Surjyadipta Bhattacharjee, Yuhai Zhao, James M. Hill, Frank Culicchia, Theodore P.A. Kruck, Maire E. Percy, Aileen I. Pogue, J.R. Walton, Walter J. Lukiw

Journal of Inorganic Biochemistry 126 (2013) 35–37

Selective accumulation of aluminum in cerebral arteries in Alzheimer's disease (AD)

Aluminum content of major arteries that serve the human brain, including the aorta, the common carotid artery (CCA), the vertebral artery (VA), the internal cerebral artery (ICA), the basilar artery (BA), the posterior cerebral artery (PCA), the middle cerebral artery (MCA) and the anterior cerebral artery were examined using electrothermal atomic absorption spectroscopy (ETAAS).



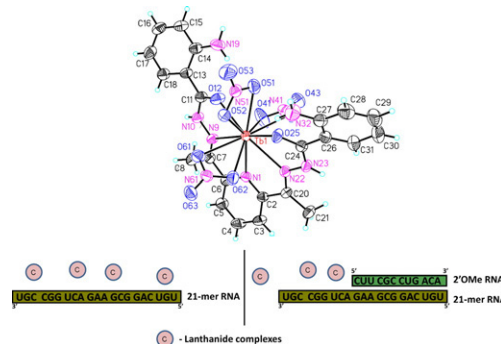
A novel arterial route for aluminum entry into the brain

Michał Kozłowski, Ryszard Kierzek, Maciej Kubicki, Wanda Radecka-Paryzek

Journal of Inorganic Biochemistry 126 (2013) 38–45

Metal-promoted synthesis, characterization, crystal structure and RNA cleavage ability of 2,6-diacetylpyridine bis(2-aminobenzoylhydrazone) lanthanide complexes

The lanthanide 2,6-diacetylpyridine bis(2-aminobenzoylhydrazone) complexes are synthesized by template method. They extend the number of structurally documented lanthanide complexes displaying high and a relatively rare coordination number of 11. These complexes are able to cleave the phosphodiester bond in 21-mer RNA in a sequence-selective or non-selective manner.

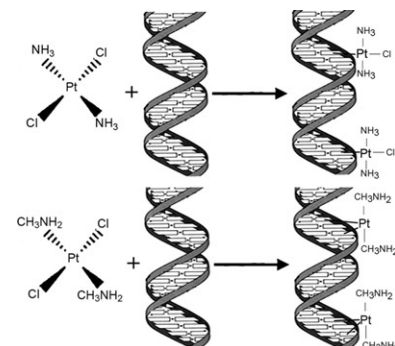


Michaela Frybortova, Olga Novakova, Jana Stepankova, Vojtech Novohradsky, Dan Gibson, Jana Kasparkova, Viktor Brabec

Journal of Inorganic Biochemistry 126 (2013) 46–54

Activation of trans geometry in bifunctional mononuclear platinum complexes by a non-bulky methylamine ligand

The replacement of ammine groups by the non-bulky methylamine ligand in ineffective transplatin results in a radical enhancement of its activity in tumor cell lines. There is a correlation between DNA binding modes of transplatin and its analog containing the methylamine ligands and their toxicity in the tumor cell lines.

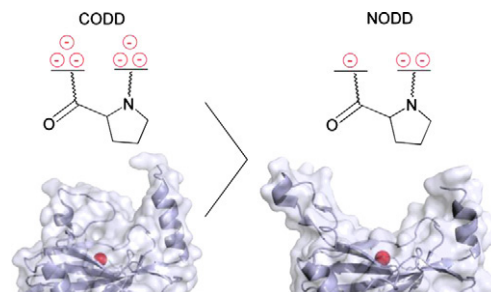


Serap Pektas, Michael J. Knapp

Journal of Inorganic Biochemistry 126 (2013) 55–60

Substrate preference of the HIF-prolyl hydroxylase-2 (PHD2) and substrate-induced conformational change

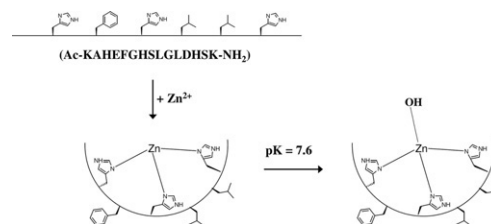
Electrostatics favors binding and loop closure for PHD2.

**Dávid Árus, Nóra Veronika Nagy, Ágnes Dancs, Attila Jancsó, Róbert Berkecz, Tamás Gajda**

Journal of Inorganic Biochemistry 126 (2013) 61–69

A minimalist chemical model of matrix metalloproteinases – Can small peptides mimic the more rigid metal binding sites of proteins?

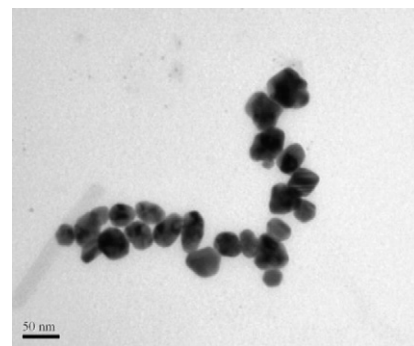
Despite the modest zinc binding affinity, the studied small, flexible peptide is able to mimic several basic features of the matrix metalloproteinase active sites: provides $\{3N_{im}\}$ coordination environment, stable ternary complexes are formed with hydroxamic acids, the deprotonation of the zinc-bound water takes place around pH 7, and the mixed-hydroxo complexes possess notable hydrolytic activity.

**Yanhua Cao, Huajie Liu, Qingzhao Li, Qian Wang, Wenli Zhang, Yinping Chen, Dong Wang, Yuan Cai**

Journal of Inorganic Biochemistry 126 (2013) 70–75

Effect of lead sulfide nanoparticles exposure on calcium homeostasis in rat hippocampus neurons

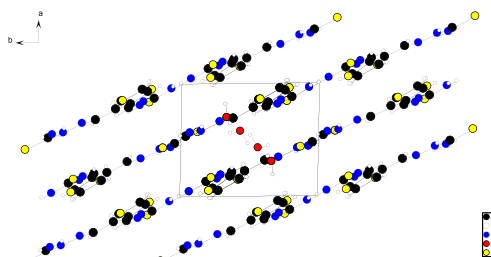
The neurotoxicity of PbS nanoparticles in rats was systematically studied. The results showed that PbS nanoparticles could induce calcium homeostasis disorder and therefore cause neuronal damage.

**Kusai Alomar, Anne Landreau, Magali Allain, Gilles Bouet, Gérald Larcher**

Journal of Inorganic Biochemistry 126 (2013) 76–83

Synthesis, structure and antifungal activity of thiophene-2,3-dicarboxaldehyde bis(thiosemicarbazone) and nickel(II), copper(II) and cadmium(II) complexes: Unsymmetrical coordination mode of nickel complex

The reaction of nickel(II) with thiophene-2,3-dicarboxaldehyde bis(thiosemicarbazone) (2,3BTSTCH₂) gave $[Ni(2,3BTSTCH)]Cl$ complex with an unusual non-symmetrical coordination mode for the two functional groups: one as a thione, the second as a deprotonated thiolate. The cadmium complexes showed the highest antifungal activity with low toxicity towards human MRC5 cultured cells and brine shrimp *Artemia salina*.

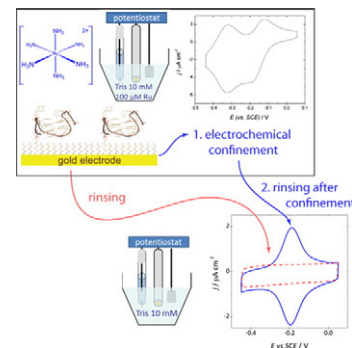


**Aurore De Rache, Thomas Doneux,
Iva Kejnovská, Claudine Buess-Herman**

Journal of Inorganic Biochemistry 126 (2013)
84–90

On the interaction between $[\text{Ru}(\text{NH}_3)_6]^{3+}$ and the G-quadruplex forming thrombin binding aptamer sequence

Hexaammineruthenium can be tightly bound to the thrombin binding aptamer, an anti-parallel G-quadruplex forming DNA sequence. A 2:1 stoichiometry is found, markedly different from the 5:1 ratio expected on the basis of a simple electrostatic charge compensation.

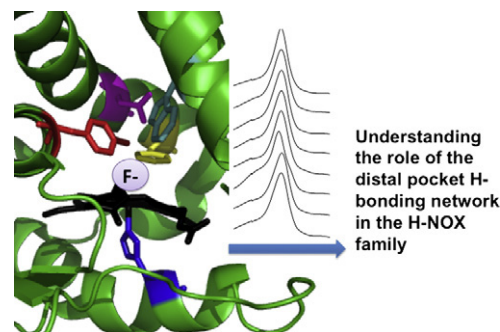


John G. Kosowicz, Elizabeth M. Boon

Journal of Inorganic Biochemistry 126 (2013)
91–95

Insights into the distal heme pocket of H-NOX using fluoride as a probe for H-bonding interactions

Analysis of the UV/visible spectra of ferric-fluoride complexes of wild-type and mutant H-NOX (heme-nitric oxide/oxygen binding) proteins yields an understanding of the role of the distal pocket H-bonding network in regulating ligand binding.

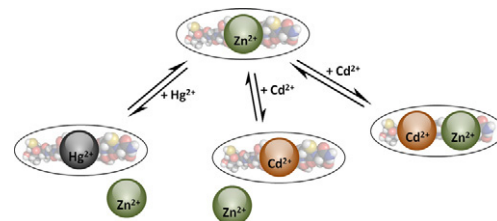


**Attila Jancsó, Béla Gyurcsik, Edit Mesterházy,
Róbert Berkecz**

Journal of Inorganic Biochemistry 126 (2013)
96–103

Competition of zinc(II) with cadmium(II) or mercury(II) in binding to a 12-mer peptide

Interaction of Zn^{2+} with the Ac-SCPGDQGSDCSI-NH₂ peptide, and competition with Cd^{2+} and Hg^{2+} in binding to the ligand have been investigated.

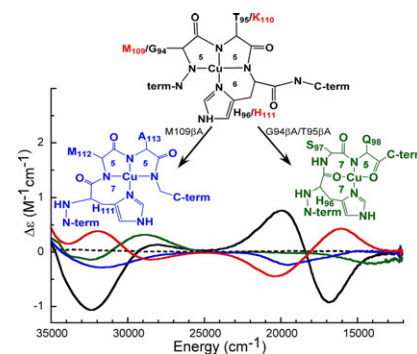


**Lina Rivillas-Acevedo, Luis Maciel-Barón,
Javier E. García, Eusebio Juaristi,
Liliana Quintanar**

Journal of Inorganic Biochemistry 126 (2013)
104–110

Insertion of beta-alanine in model peptides for copper binding to His96 and His111 of the human prion protein

Insertion of β -alanine in the copper-binding human prion fragments 92–99 and 106–115 leads to completely different Cu(II) coordination modes. The nature of the Cu(II)–peptide complexes is determined by the chelate effect and the nature of the residues associated to the amide groups that participate in copper coordination.

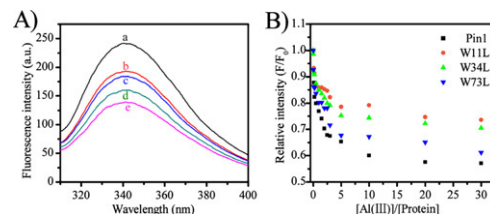


**Jing-Zhang Wang, Ji Liu, Tao Lin,
Yong-Guang Han, Yue Luo, Lei Xi,
Lin-Fang Du**

Journal of Inorganic Biochemistry 126 (2013)
111–117

Aluminum(III) interferes with the structure and the activity of the peptidyl-prolyl cis-trans isomerase (Pin1): A new mechanism contributing to the pathogenesis of Alzheimer's disease and cancers?

Aluminum(III) interferes with the structure and the activity of the peptidyl-prolyl cis-trans isomerase Pin1, potentially contributing to Pin1-related diseases.

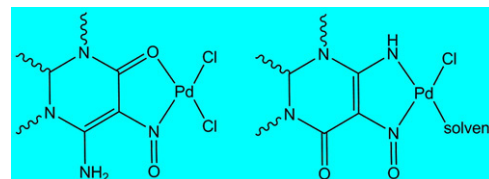


**Nuria A. Illán-Cabeza, Antonio R. García-García,
José M. Martínez-Martos,
María J. Ramírez-Expósito,
Miguel N. Moreno-Carretero**

Journal of Inorganic Biochemistry 126 (2013)
118–127

Antiproliferative effects of palladium(II) complexes of 5-nitrosopyrimidines and interactions with the proteolytic regulatory enzymes of the renin-angiotensin system in tumoral brain cells

Seventeen new palladium(II) complexes of general formulae PdCl₂L, PdCl(LH₋₁) (solvent) and PdCl₂(PPh₃)₂L containing ligands derived from 6-amino-5-nitrosouracil and violuric acid are reported. Data indicate N,O (neutral) and N,N (anionic) bidentate coordination modes. The antiproliferative activity against human neuroblastoma (NB69) and human glioma (U373) cell lines and the interaction with the proteolytic regulatory enzymes of renin-angiotensin system are also reported.



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