



## Contents

### Preface

Ian S. Butler, Sahar I. Mostafa

*Inorganica Chimica Acta* 423 (2014) 1

Preface

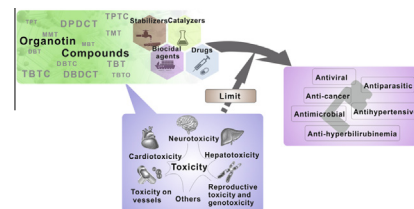
### Reviews

Lin Niu, Yunlan Li, Qingshan Li

*Inorganica Chimica Acta* 423 (2014) 2

Medicinal properties of organotin compounds and their limitations caused by toxicity

Organotin compounds are generally used in industry and agriculture. Besides, their applications as drugs have been also found and discussed. The medicinal properties include anti-cancer, antiparasitic, antimicrobial, antiviral, antihypertensive activities and anti-hyperbilirubinemia. However, their various toxicities limit the use of medicinal organotin compounds.

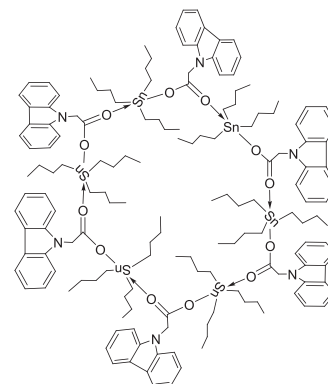


Muhammad Kashif Amir,  
Shahanzeb Khan, Zia-ur-Rehman,  
Afzal Shah, Ian S. Butler

*Inorganica Chimica Acta* 423 (2014) 14

Anticancer activity of organotin(IV) carboxylates

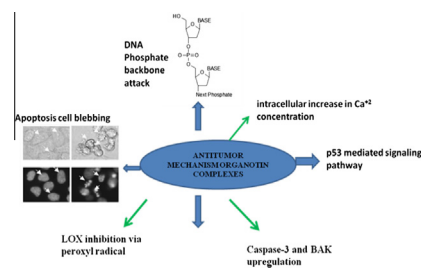
The anticancer activity of organotin(IV) carboxylates in the last five years are reviewed including organotin(IV) carboxylates with promising anticancer activity against different cell lines. Some of them have shown pronounced activity against cisplatin-resistant cancer cells. The review also highlights structure–activity relationships.



**Farukh Arjmand, Sabiha Parveen,  
Sartaj Tabassum, Claudio Pettinari**
*Inorganica Chimica Acta 423 (2014) 26*

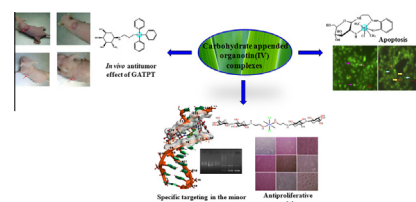
Organo-tin antitumor compounds: Their present status in drug development and future perspectives

This review article summarizes the progress made by organotin compounds as antitumor chemotherapeutic drug candidates and thereby, explores the landmarks for their future projections in drug industry. The detailed mechanism by which organotin trigger apoptosis in response to the DNA damage is not yet clear, but it is widely accepted that cellular stress can induce the activation and stabilization of tumor suppressor p53 gene, resulting in the cell cycle arrest and/or apoptosis.


**Sartaj Tabassum, Shipra Yadav,  
Farukh Arjmand**
*Inorganica Chimica Acta 423 (2014) 38*

Exploration of glycosylated-organotin(IV) complexes as anticancer drug candidates

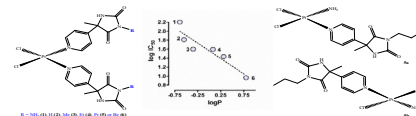
This review article focuses on the rational design and synthesis of carbohydrate appended organotin(IV) complexes as anticancer drug candidates. Organotin moiety tethered to a bioactive carbohydrate pharmacophore represents a clinically relevant vehicle for delivery of anticancer drugs. The carbohydrate functionalized organotin complexes interact with cancer cells via different modes than other classical anticancer drugs leading to alternative therapeutic protocols with enhanced the cytotoxicity profile.


**Articles**
**Adriana Bakalova, Rossen Buyukliev,  
Hristo Varbanov, Georgi Momekov**
*Inorganica Chimica Acta 423 (2014) 46*

Design, synthesis and comparative cytotoxic investigation of platinum(II) complexes with some derivatives of 5-methyl-5-(4-pyridyl)hydantoin

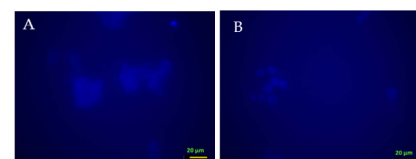
Five new Pt(II) complexes with 3-substituted derivatives of 5-methyl-5-(4-pyridyl)hydantoin were synthesized and investigated. The new compounds were characterized by elemental

analysis, IR,  $^1\text{H}$  and  $^{13}\text{C}$  NMR spectroscopy. The spectroscopic data showed that in all cases, the carrier ligands coordinate to the platinum centre in a monodentate manner through the nitrogen atom from the pyridine ring. The cytotoxic activity of the new Pt(II) compounds in a panel of human tumor cell lines was juxtaposed to that of previously synthesized analogues. Cytotoxicity of the investigated complexes showed to be strongly dependent on their lipophilicity. The most prominent compound, featuring 3-benzyl-5-methyl-5-(4-pyridyl)hydantoin as carrier ligand, inhibits the viability of tested cells at low micromolar concentrations with  $\text{IC}_{50}$  values comparable to that of cisplatin. The *cis*- and *trans*-mixed am(m)ine complexes with general formula  $[\text{PtL}(\text{NH}_3)\text{Cl}_2]$  exhibited far less cytotoxicity than their analogue, featuring the same organic ligand (*cis*- $[\text{PtL}_2\text{Cl}_2]$ ).


**Anastasia Galani, Eleni K. Efthimiadou,  
Theodosios Theodosiou, George Kordas,  
Alexandra Karaliota**
*Inorganica Chimica Acta 423 (2014) 52*

Novel levofloxacin zinc (II) complexes with N-donor heterocyclic ligands, as potential fluorescent probes for cell imaging: Synthesis, structural characterization and *in vitro* cytotoxicity

Fluorescence images of MCF-7 cells after 2 h treatment with complex **1** (A) and **2** (B).



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