Diorganotin complexes of a thiosemicarbazone, synthesis: properties, X-ray crystal structure, and antiproliferative activity of diorganotin complexes.

Autorzy

Joanna Wiecek

Dimitra Kovala-Demertzi

Zbigniew Ciunik

Maria Zervou

Mavroudis A. Demertzis

Rok wydania

2010

Czasopismo

Bioinorganic Chemistry and Applications

Strony

867195/1-867195/9

DOI

10.1155/2010/867195

Kolekcja

Naukowa

Język

Angielski

Typ publikacji

Artykuł

Streszczenie

The synthesis and spectral characterization of novel diorganotin complexes with 3-hydroxypyridine-2-carbaldehyde thiosemicarbazone, H2L (1), [SnMe2(L)] (2), [SnBu2(L)] (3), and [SnPh2(L)] (4) are reported. The single-crystal X-ray structure of complex [SnPh2(L)(DMSO)] (5) shows that the ligand is doubly deprotonated and is coordinated as tridentate ligand. The six coordination number is completed by two carbon atoms of phenyl groups. There are two similar monomers 5a (Sn1) and 5b (Sn51) in the asymmetric unit. The monomers 5a and 5b are linked through intermolecular hydrogen bonds of N–H–O and C–H–S type. C–H → π, intermolecular interactions, intra- and intermolecular hydrogen bonds stabilize this structure and leads to aggregation and a supramolecular assembly. The IR and NMR (1H, 13C and 119Sn) spectroscopic data of the complexes are reported. The in vitro cytotoxic activity has been evaluated against the cells of three human cancer cell lines: MCF-7 (human breast cancer cell line), T-24 (bladder cancer cell line), A-549 (nonsmall cell lung carcinoma) and a mouse L-929 (a fibroblast-like cell line cloned from strain L). Compounds 1, 3, and 4 were found active against all four cell lines. Selectivity was observed for complexes 3 and 4 which were found especially active against MCF-7 and T-24 cancer cell lines.

Adres publiczny

http://dx.doi.org/10.1155/2010/867195