

Structure-cytotoxicity relationship for different types of mononuclear platinum(II) complexes with 5,7-ditertbutyl-1,2,4-triazolo[1,5-a]pyrimidine.

Autorzy

Iwona Łakomska
Marzena Fandzloch
Tadeusz Muzioł
Jerzy Sitkowski
Joanna Wietrzyk

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Streszczenie

To compare the *in vitro* cytotoxicity of platinum(II) complexes with 5,7-ditertbutyl-1,2,4-triazolo[1,5-a]pyrimidine (dbtp), three complexes were prepared: *cis*-[PtI₂(dbtp)₂] (**1**), *cis*-[Pt(NO₃)₂(dbtp)₂] (**2**) and *cis*-[Pt(C₄H₄O₅)(dbtp)₂] (**3**). The coordination compounds have been structurally characterized by IR; ¹H, ¹³C, ¹⁵N, ¹⁹⁵Pt NMR and single-crystal X-ray diffraction (**1**). Spectroscopic studies reveal the monodentate coordination of the heterocycleligand (dbtp) via N(3) to platinum(II) ions. In addition, the crystal structure of (**1**) shows that the platinum(II) ion is located in nearly square-planar PtI₂N₂ environments with two heterocycle ligands (dbtp) arranged in a head-to-head orientation. The complexes have been screened for their cytotoxicity against two human cells: non-small cell lung carcinoma (A549) and breast cancer (T47D). All of the complexes demonstrated a significant antiproliferative activity against both cell lines. On the basis of these results, it is concluded that the cytotoxicity of the studied compounds against T47D follows the order: (**3**) < (**1**) < (**2**).

Słowa kluczowe

Platinum(II) complex, ¹⁵N NMR, X-ray, Triazolopyrimidine, *In vitro* cytotoxicity

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