



In search of new anticancer drug : dimethylsulfoxide ruthenium(III) complex with bulky triazolopyrimidine derivative and preliminary studies towards understanding the mode of action.

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Rok wydania

2018

Czasopismo

Polyhedron

Numer woluminu

141

Strony

239-246

DOI

10.1016/j.poly.2017.11.035

Kolekcja

Naukowa

Język

Angielski

Streszczenie

By reacting of $[H(dmsO)_2]trans-[RuCl_4(dmsO)_2]$ with 5,7-ditertbutyl-1,2,4-triazolo[1,5-a]pyrimidine (dbtp) in molar ratio of M:L=1:2 new ruthenium(III) complex *mer,cis*- $[RuCl_3(dbtp)_2(dmsO)]$ has been prepared and structurally characterized by X-ray, IR and EPR spectroscopies. The crystal structure of the Ru(III) complex showed slightly distorted octahedral geometry with unique *cis* positioned monodentate dbtp ligands bound to the ruthenium(III) ion through the N3 nitrogen atom. *In vitro* toxicity assay proves that slightly lipophilic the *mer,cis*- $[RuCl_3(dbtp)_2(dmsO)]$ ($\log P=0.80$) is 5-fold less toxic against non-tumorigenic human epithelial cell line (MCF-10A) and normal murine embryonic fibroblast cells (BALB/3T3) than cisplatin. Preliminary studies towards understanding the mode of action suggested that activation by reduction, electrostatic interactions of the *mer,cis*- $[RuCl_3(dbtp)_2(dmsO)]$ with CT-DNA and selective delivery to cells by apotransferrin might be relevant for the biological properties of the complex.

Słowa kluczowe

Ruthenium(III) complex, Triazolopyrimidine, In vitro cytotoxicity, CT-DNA, Proteins

Adres publiczny

<http://dx.doi.org/10.1016/j.poly.2017.11.035>

Strona internetowa wydawcy

<http://www.elsevier.com>

Artykuł

Plik został wygenerowany dnia 2026-10-10 13:35:06

Adres w repozytorium <https://old.chem.uni.wroc.pl/pl/repozytorium/uPebWg5>.