From sunscreen to anticancer agent: ruthenium(II) arene avobenzone complexes display potent anticancer activity.

Autorzy

Riccardo Pettinari

Fabio Marchetti

Agnese Petrini

Claudio P. Pettinari

Giulio Lupidi

Piotr Smoleński

Rosario Scopelliti

Tina Riedel

Paul J. Dyson

Rok wydania

2016

Czasopismo

Organometallics

Numer woluminu

35

Strony

3734-3742

DOI

10.1021/acs.organomet.6b00694

Kolekcja

Naukowa

Język

Angielski

Streszczenie

A series of ruthenium(II) arene derivatives (arene = cymene (cym), hexamethylbenzene (hmb)) containing avobenzone (1-(4-*tert*-butylphenyl)-3-(4-methoxyphenyl)propane-1,3-dione, AVBH) and PTA (1,3,5-triaza-7-phosphaadamantane) or PTA-Me (*N*-methyl-1,3,5-triaza-7-phosphaadamantane cation) have been synthesized and fully characterized. Three types of complexes have been obtained: i.e., neutral [Ru(arene)(AVB)Cl] (**1**, arene = cym; **2**, arene = hmb), monocationic [Ru(arene)(AVB)(PTA)][SO_3CF_3] (**3**, arene = cym; **4**, arene = hmb), and dicationic [Ru(arene)(AVB)(PTA-Me)][SO_3CF_3][BF_4] (**5**, arene = cym; **6**, arene = hmb). The solid-state structures of **1** and **2** were determined by single-crystal X-ray diffraction. The cytotoxicity of the complexes has been evaluated *in vitro* against human ovarian carcinoma cells, A2780 and A2780cisR, as well as against nontumorous Human Embryonic Kidney (HEK293) cells. The ionic complexes with hydrophilic PTA and PTA-Me ligands in **3**–**6** are considerably more active than the neutral complexes **1** and **2**.

Adres publiczny

http:/dx.doi.org/10.1021/acs.organomet.6b00694

Strona internetowa wydawcy

https://www.acs.org/content/acs/en.html

Typ publikacji

Artykuł