Electronic Supplementary Information:

In vivo anti-tumor activity of the organometallic ruthenium(II)-arene complex [Ru(η^6-*p*-cymene)Cl_2(pta)] (RAPTA-C) in human ovarian and colorectal carcinomas

Andrea Weiss,[a,b] Robert H. Berndsen,[b] Maxime Dubois,[c] Cristina Müller,[c] Roger Schibli,[c,d] Arjan W. Griffioen,[b] Paul J. Dyson,[a*] and Patrycja Nowak-Sliwinska[a*]

[a] Institute of Chemical Sciences and Engineering, Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland.
[b] Angiogenesis Laboratory, Department of Medical Oncology, VU University Medical Center, Amsterdam, The Netherlands.
[c] Center for Radiopharmaceutical Sciences ETH-PSI-USZ, Villigen-PSI, Switzerland.
[d] Department of Chemistry and Applied Biosciences, ETH Zurich, Zurich, Switzerland
[*] Correspondance to:
Dr. Patrycja Nowak-Sliwinska, Institut des Sciences et Ingénierie Chimiques, Ecole Polytechnique Fédérale de Lausanne (EPFL), CH-1015 Lausanne, Switzerland; Tel: +41 21 693 5169, Fax: + 41 61 693 5110, e-mail: Patrycja.Nowak-Sliwinska@epfl.ch

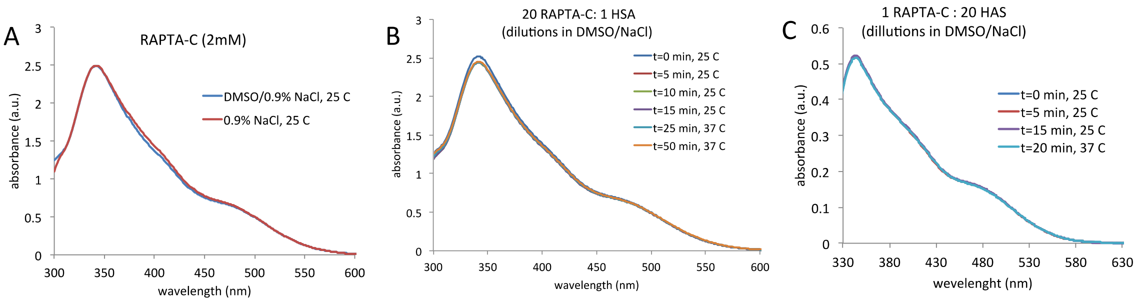

Figure S1. Spectral profiles for RAPTA-C solutions in various solvents recorded at 25°C or 37°C. HSA: human serum albumin. Absorption spectra of RAPTA-C solutions were recorded with a two-beam Varian Cary UV-Vis-NIR 500 Scan spectrophotometer in 1cm quartz cuvettes (Suprasil, Hellma, Müllheim, Germany) between 300 and 600 nm with an average scan speed of 600 nm/min at 25°C or 37°C. These spectra indicate that RAPTA-C is stable under the tested conditions.

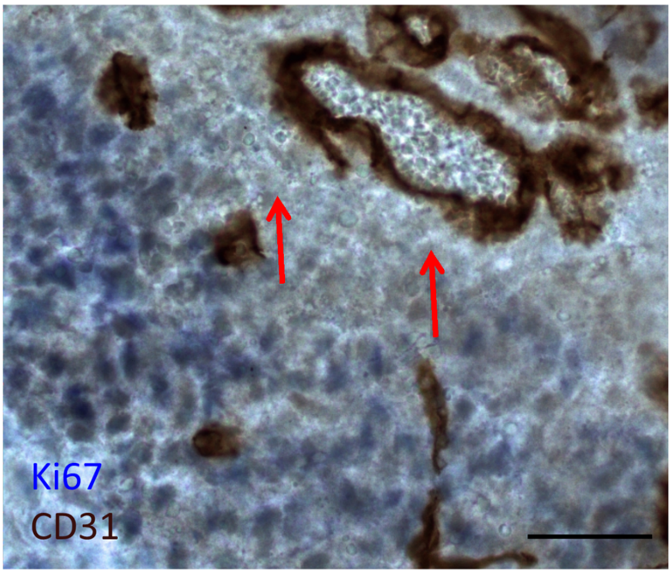

Figure S2. Image showing immunohistochemical staining of LS174T tumor treated with RAPTA-C at 100 mg kg^{-1}. The islands of tumor cells (red arrows) around the vasculature (CD31, in brown) were Ki-67 negative, meaning that tumor cells were in a quiescent state. On the tumor periphery Ki-67 (in blue) tumor cells were visible.

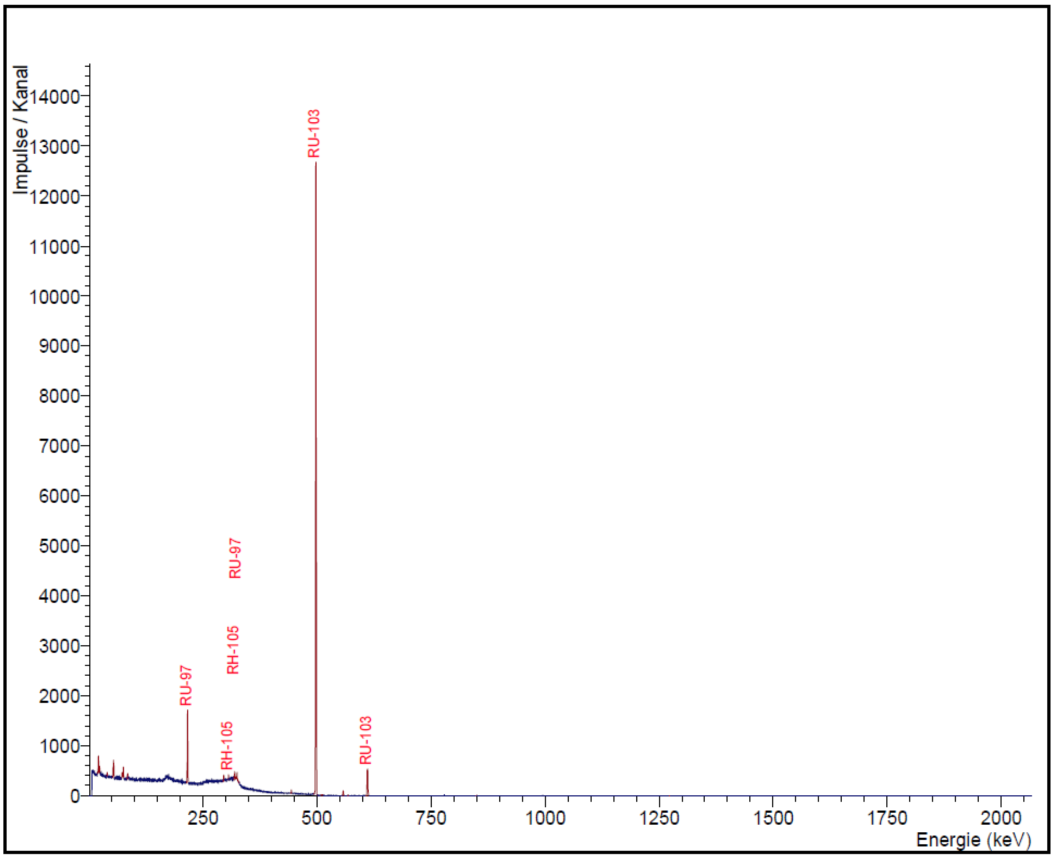

Figure S3. □-ray spectrometry after work-up of the target material. The spectrum shows the □-rays of ^{103}Ru (497 keV, 91% and 610 keV, 5.8%) and □-rays of traces of ^{97}Ru (215, 85.6% and 324 keV, 10.8%) as well as ^{105}Ru (316 keV, 11.1%) are also visible.

Equation used to estimate ^{103}Ru activity

$$A_{^{103}Ru} = N_{^{102}Ru} \cdot \sigma \cdot \phi \cdot \left(1 - e^{-\lambda \cdot t}\right)$$

A: activity [Bq]
N: number of ^{102}Ru atoms
σ: thermal cross section of ^{102}Ru [barn]
ϕ: neutron flux [$n \cdot cm^{-2} \cdot s^{-1}$]
λ: $\frac{\ln(2)}{T_{1/2}}$ [h^{-1}]
t: irradiation time [h]