Supporting Information

Neutron-irradiated antibody-functionalised carbon nanocapsules for targeted cancer radiotherapy

Julie Tzu-WenWang^a, CinziaSpinato^b, Rebecca Klippstein^a, Pedro Miguel Costa^a, Markus Martincic^c, ElzbietaPach^d, Aritz Perez de Garibay^b, Cécilia Ménard-Moyon^b, Robert Feldman^e, Yves Michel^e, Martin Šefl^f,Ioanna Kyriakou^f, Dimitris Emfietzoglou^f, Jean-Claude Saccavini^e, Belén Ballesteros^d, Gerard Tobias^{c,*}, Alberto Bianco^{b,*} and Khuloud T. Al-Jamal^{a,*}

^aSchool of Cancer and Pharmaceutical Sciences, Faculty of Life Sciences & Medicine, King's College London, London SE1 9NH, UK

^bUniversity of Strasbourg, CNRS, Immunology, Immunopathology and Therapeutic Chemistry, UPR 3572, 67000 Strasbourg, France

^cInstitut de Ciència de Materials de Barcelona (ICMAB-CSIC), Campus UAB, 08193 Bellaterra, Barcelona, Spain

dCatalan Institute of Nanoscience and Nanotechnology (ICN2), CSIC and the Barcelona Institute of Science and Technology, Campus UAB, 08193 Bellaterra, Barcelona, Spain
eCis Bio InternationalIon Beam Applications SA, Gif sur Yvette 91192, France
fMedical Physics Laboratory, University of Ioannina Medical School, Ioannina GR-45110, Greece

E-mail: khuloud.al-jamal@kcl.ac.uk;a.bianco@ibmc-cnrs.unistra.fr;gerard.tobias@icmab.es

^{*} To whom correspondence should be addressed.

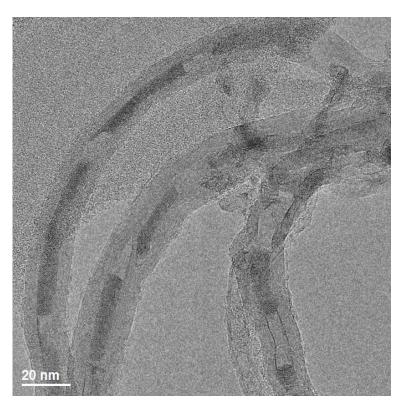


Figure S1:HRTEM image of SmCl₃ filled MWCNTs

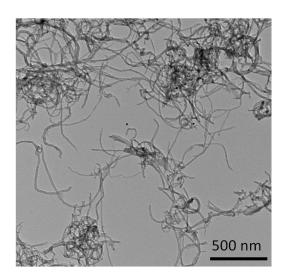


Figure S2: TEM image of ¹⁵²Sm@MWCNT-Ab after staining with the anti-rabbit IgG/AuNP.

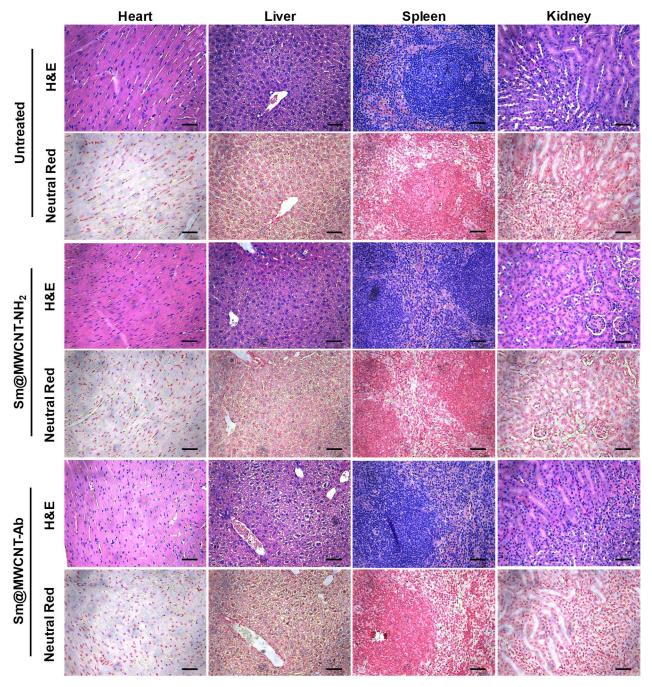


Figure S3: Histological examination of major organs in tumour-bearing mice post ¹⁵³Sm@MWCNT-NH₂ and ¹⁵³Sm@MWCNT-Ab radiotherapy. EGFR-expressing B16F10 lung metastasis-bearing C57BL/6 mice received a single i.v injection of ¹⁵³Sm@MWCNT-NH₂ or ¹⁵³Sm@MWCNT-Ab (~15 MBq, 200 μg) on Day 4 post tumour inoculation. Major organs including heart, kidney liver and spleen from the above two treated groups and the untreated group were harvested on Day 17 and proceeded with H&E (top panel) and Neutral Red (bottom panel) staining for histological examination. Scale bars: 50 μm.