

Supplementary Information

Cancer phototherapy in living cells by multiphoton release of doxorubicin from gold nanospheres

Valerio Voliani^{*a}, *Giovanni Signore*^b, *Orazio Vittorio*^{c, d, e}, *Paolo Faraci*^c, *Stefano Luin*^c, *Julia Pérez-Prieto*^a, and *Fabio Beltram*^c

a) Universidad de Valencia, Instituto de Ciencia Molecular, ICMol, Catedrático Jose Beltrán, 2,46980 Paterna, Valencia (Spain). Mail: valerio.voliani@uv.es.

b) Center for Nanotechnology Innovation @NEST, Istituto Italiano di Tecnologia, Piazza San Silvestro 12, 56127 Pisa (Italy).

c) NEST- Scuola Normale Superiore and CNR Nanoscienze, Piazza San Silvestro 12, 56127 Pisa (Italy).

d) Children's Cancer Institute Australia, Lowy Cancer Research Centre, University of New South Wales, Randwick, New South Wales (Australia).

e) Australian Centre for Nanomedicine, University of New South Wales, Randwick, New South Wales (Australia).

Figure S1

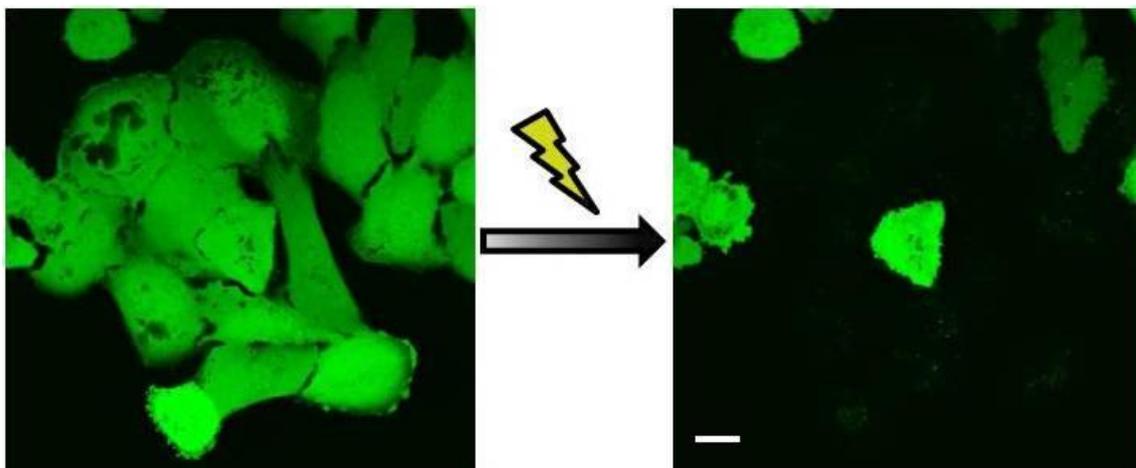


Figure S1. Confocal images showing the effect of photo-triggered doxorubicin release. Cells were incubated with a 50 pM solution of AuNSGDx for 45'. The green LUT describes calcein AM (ex/em 495/515 nm) revealing the living cells. The area was irradiated by 561 nm laser at 70 μ W scanning on the whole cell volume by a z-stack for a total of 90 seconds. After the irradiation step no calcein AM fluorescence signals were collected from the apoptotic cells. Scale bar: 10 μ m.

Figure S2

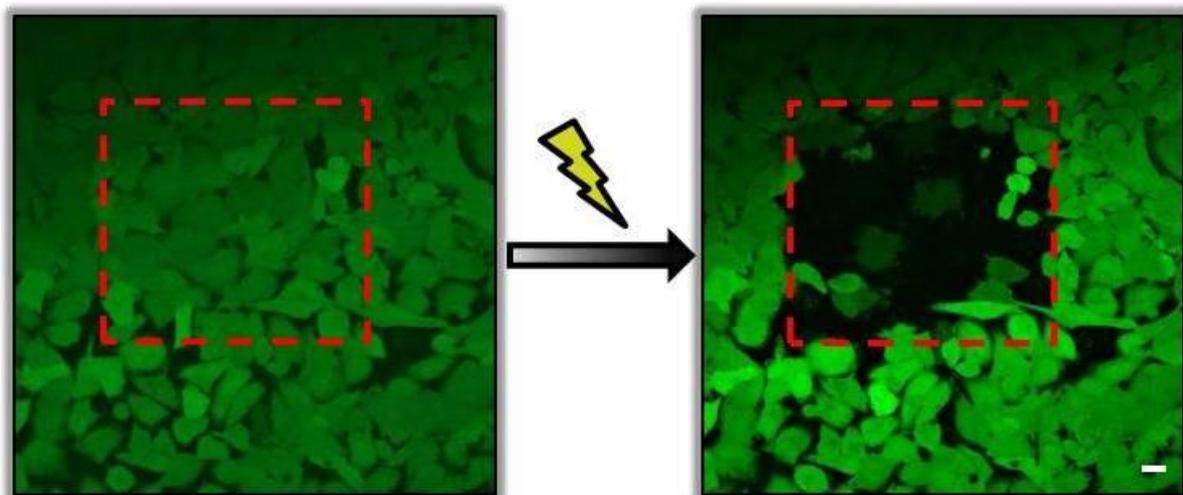


Figure S2. Confocal experiments showing the photo-triggered doxorubicin release and well-defined zone of dead cells. The green LUT describes calcein AM, revealing the living cells. A selected area was irradiated by 561 nm laser at 70 μ W with z-stack on the whole cell volume for a total of 90 seconds. After the irradiation step only the irradiated area show no calcein AM fluorescence signals, thus cellular death. Scale bar: 10 μ m.

Figure S3

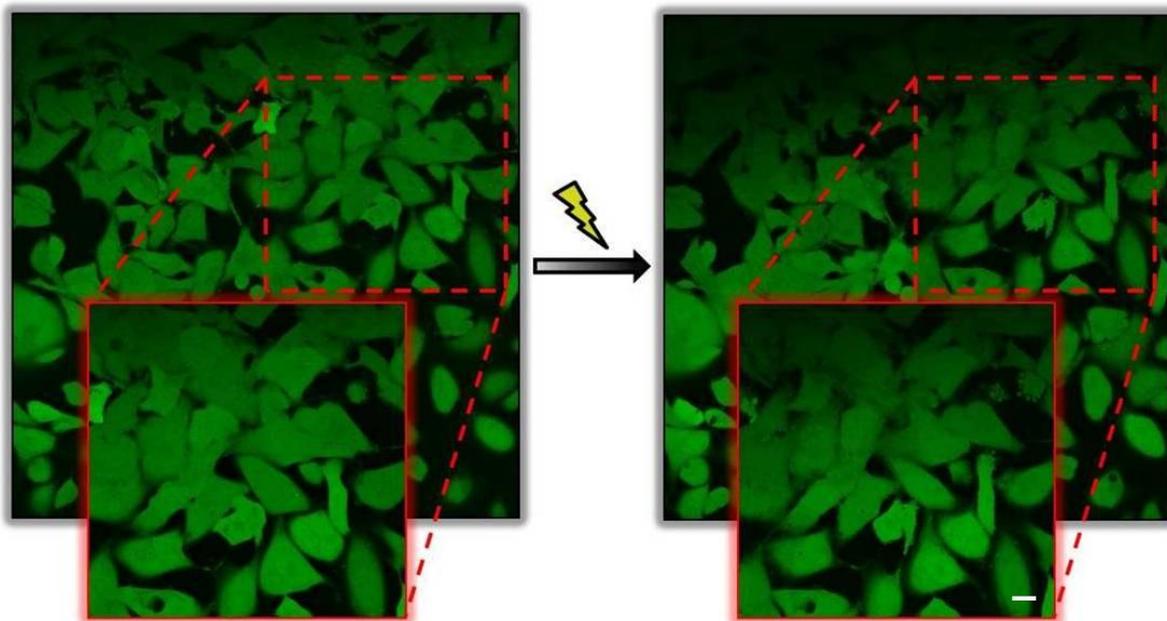


Figure S3. No cellular death was observed on U2Os cells incubated only with cell culture medium after irradiation. The green LUT describes calcein AM, revealing the living cells. Scale bar: 10 μm .

Figure S4

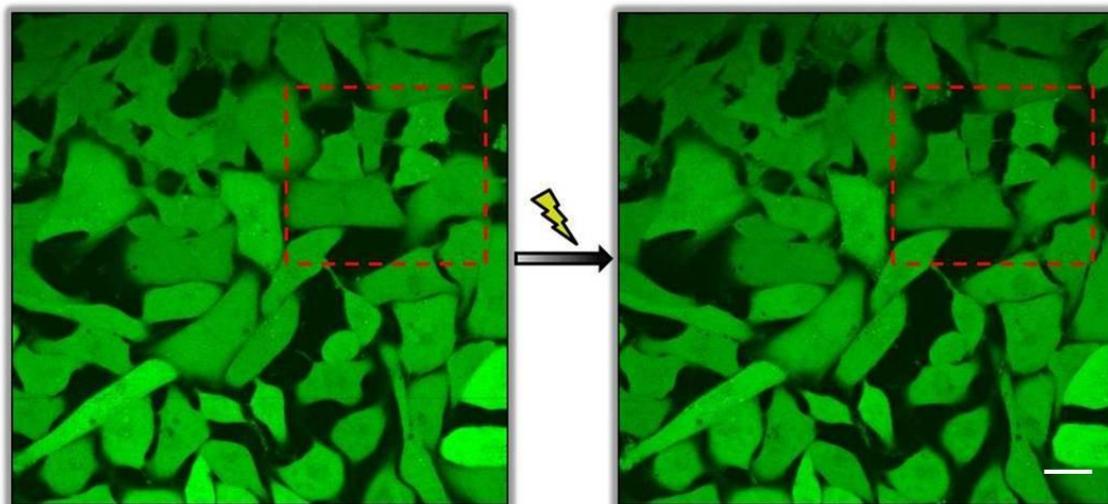


Figure S4. No cellular death was observed on U2Os cells incubated only with the non-cleavable AuNSGD system after irradiation. The green LUT describes calcein AM, revealing the living cells. Scale bar: 10 μm .