

## SUPPORTING INFORMATION

# A microscopic investigation on insulin uptake in the human hepatocellular carcinoma-derived HepG2 cells

Megren H. A. Faghihi,<sup>1,2,3,§</sup> Yuchan Lee,<sup>2,4,§</sup> Bridget Hogg,<sup>2,4</sup>

Massimiliano Garré,<sup>5</sup> Sourav Bhattacharjee<sup>2,4,6,7,8,\*</sup>

<sup>1</sup> School of Medicine, University College Dublin, Belfield, Dublin 4, Ireland

<sup>2</sup> Conway Institute of Biomolecular and Biomedicine Research, University College Dublin, Belfield, Dublin 4, Ireland

<sup>3</sup> Clinical Laboratory Sciences Department, College of Applied Medical Sciences, Najran University, Najran 55461, Kingdom of Saudi Arabia

<sup>4</sup> School of Veterinary Medicine, University College Dublin, Belfield, Dublin 4, Ireland

<sup>5</sup> Super-Resolution Imaging Consortium, Department of Chemistry, Royal College of Surgeons in Ireland University of Medicine and Health Sciences, Dublin D02 YN77, Ireland

<sup>6</sup> UCD One Health Centre, University College Dublin, Belfield, Dublin 4, Ireland

<sup>7</sup> UCD Earth Institute, University College Dublin, Belfield, Dublin 4, Ireland

<sup>8</sup> Institut für Funktionelle Anatomie, Charité – Universitätsmedizin Berlin, Campus Charité Mitte, Philippstraße 11, 10115 Berlin, Germany

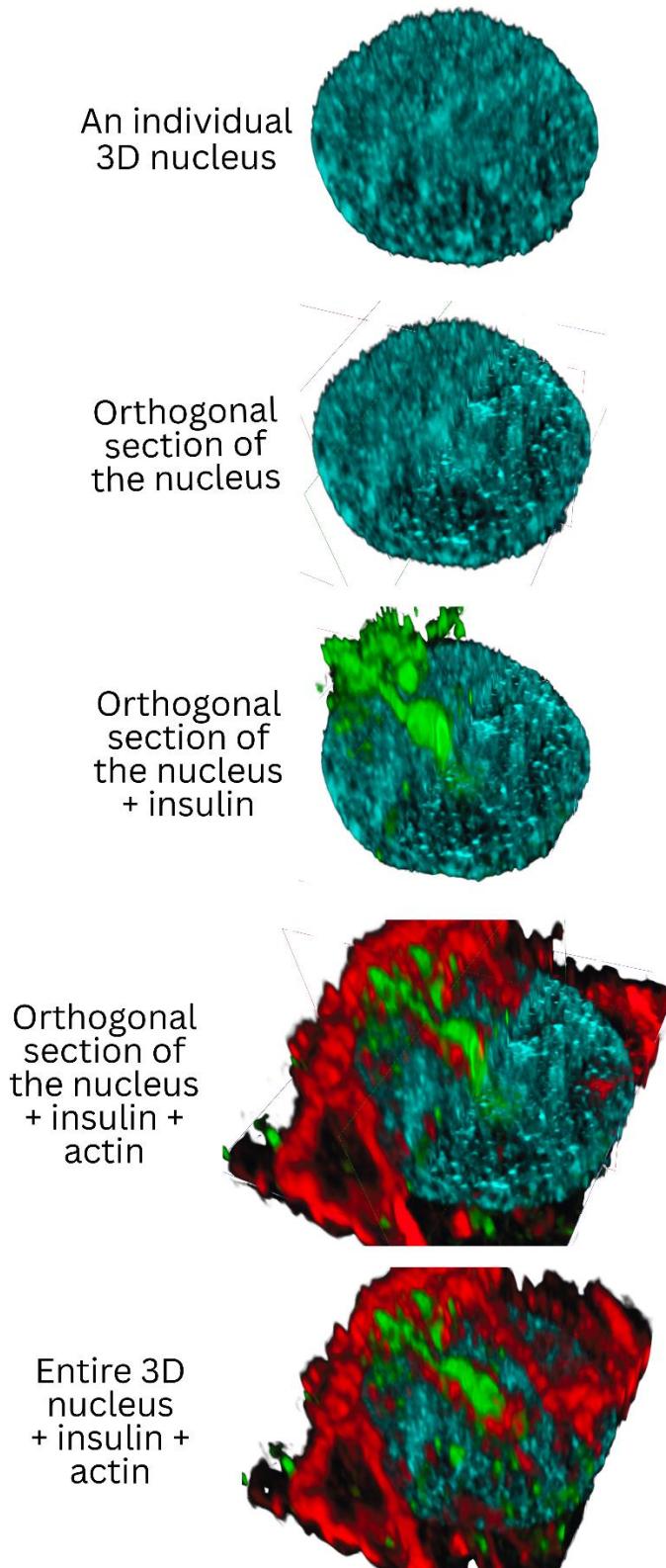
<sup>§</sup>Equal contribution

\*Corresponding author

Email: sourav.bhattacharjee@ucd.ie

T.: +353 1 716 6271

**S1.** A step-by-step visualization from a 3D rendition of a Hoechst-stained HepG2 cell nucleus showing its internal texture along with intrusion by FITC-insulin. The Alexa Phalloidin 647-stained actin filaments did not demonstrate any interaction with the nucleus.



**S2.** Video file (marked as S1\_15 min) showing the 3D rendition of the HepG2 cells derived from the CLSM data after  $t = 15$  min exposure to FITC-insulin with the nuclei, internalized FITC-insulin, and the actin filaments stained with Hoechst ( $\lambda_{ex}=405$  nm,  $\lambda_{em}=415\text{--}485$  nm), FITC ( $\lambda_{ex}=491$  nm,  $\lambda_{em}=502\text{--}600$  nm), and Alexa Phalloidin 647 ( $\lambda_{ex}=649$  nm,  $\lambda_{em}=658\text{--}775$  nm), respectively.

**S3.** Multiple video files (marked as S2\_30 min\_1/2/3) showing the 3D rendition of the HepG2 cells derived from the CLSM data after  $t = 30$  min exposure to FITC-insulin with the nuclei, internalized FITC-insulin, and the actin filaments stained with Hoechst ( $\lambda_{ex}=405$  nm,  $\lambda_{em}=415\text{--}485$  nm), FITC ( $\lambda_{ex}=491$  nm,  $\lambda_{em}=502\text{--}600$  nm), and Alexa Phalloidin 647 ( $\lambda_{ex}=649$  nm,  $\lambda_{em}=658\text{--}775$  nm), respectively.