

Live-cell 3D super-resolution imaging in thick biological samples

Francesca Cella Zanacchi, Zeno Lavagnino, Michela Perrone Donnorso, Alessio Del Bue, Laura Furia, Mario Faretta & Alberto Diaspro









Affiliations | Contributions | Corresponding author

Nature Methods (2011) | doi:10.1038/nmeth.1744

Received 20 January 2011 | Accepted 03 October 2011 | Published online 09 October 2011

We demonstrate three-dimensional (3D) super-resolution live-cell imaging through thick specimens (50–150 μm), by coupling far-field individual molecule localization with selective plane illumination microscopy (SPIM). The improved signal-to-noise ratio of selective plane illumination allows nanometric localization of single molecules in thick scattering specimens without activating or exciting molecules outside the focal plane. We report 3D super-resolution imaging of cellular spheroids.

View full text ▶

-  [full text](#)
-  [print](#)
-  [email](#)
-  [download pdf](#)
-  [download citation](#)
-  [order reprints](#)
-  [rights and permissions](#)
-  [share/bookmark](#)