The Vertical Turn - Combining Light Sheet and Confocal with the Leica TCS SP8

DLSDr Petra Haas, Leica Microsystems

Light sheet microscopy is a highly suitable way of imaging sensitive samples or fast biological processes by illuminating the specimen only in a single plane. Since there is no out-of-focus excitation, phototoxic effects can be reduced to the focal plane. It also means that you automatically have optical sectioning and you can image specimens in 3D by moving the sample through the light sheet.

Light sheet microscopy usually requires a dedicated optical setup on an independent system, where the illuminating and detecting objective are perpendicular to each other. The Leica TCS SP8 DLS makes light sheet microscopy as easy as never before. The unique TwinFlect mirror device deflects the illuminating light sheet at a 90° angle and allows the integration of the illumination and detection beam path into the vertical axis of every inverted Leica TCS SP8 without compromising confocal functionality.

The light sheet module is more than a functional add-on to your confocal. The Leica TCS SP8 the Digital LightSheet module synergize and give you the possibility to expand your options. You can manipulate specimens using the confocal technology by simply switching between confocal and light sheet mode in LAS X software. Photoconversion or wounding experiments with subsequent gentle long-term observations become easy and convenient.