Auditory hair cells are the mechanical sensors of sound waves in the inner ear, and the stereocilia, which are actin-rich protrusions of different heights on the apical surfaces of hair cells, are responsible for the transduction of sound waves into electrical signals. As a crucial actin-binding and bundling protein, espin is able to cross-link actin filaments and is therefore necessary for stereocilia morphogenesis. Using advanced super-resolution stimulated emission depletion microscopy, we imaged espin expression at the sub-diffraction limit along the whole length of the stereocilia in outer hair cells and inner hair cells in order to better understand espin's function in the development of stereocilia [1].

1)
Qi J, Zhang L, Tan F, Liu Y, Chu C, Zhu W, Wang Y, Qi Z, Chai R. Espin distribution as revealed by super-resolution microscopy of stereocilia. Am J Transl Res. 2020 Jan 15;12(1):130-141. PMID: 32051742; PMCID: PMC7013225.