

A WICB 50th Favorite: Dynamic actin-mediated nano-scale clustering of CD44 regulates its meso-scale organization at the plasma membrane

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To celebrate the 50th anniversary of the American Society for Cell Biology's Women in Cell Biology Committee (WICB), members of WICB and the MBoC Editorial Board invited a diverse group of scientists to highlight MBoC papers by women that have had a scientific or personal impact on the authors of the highlight.

This study examines the hierarchical organization of the plasma membrane at meso- and nano-scales. Large transmembrane proteins and adhesion receptors such as CD44 interact with both the extracellular matrix and the intracellular cortex and are crucial for

plasma membrane organization. Using high-resolution imaging, Sil *et al.* (2020) show that CD44 is present in a meso-scale meshwork, with regions where receptors could be confined. The boundary of this meshwork is enriched with CD44 nanoclusters dependent on the underlying acto-myosin cortex. This elegant work enhances our understanding of the well-known picket-fence model and also opens avenues to decipher the dynamics of signaling receptors. This work is also particularly inspiring to me because of two wonderful female authors, P. Sil, an ECR whose inquisitiveness and thoroughness in data acquisition I have personally admired, and M. F. Garcia-Parajo, whose long-time work on superresolution imaging has been crucial and impactful for deciphering nano-scale organization.

DOI:10.1091/mbc.E21-06-0289

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REFERENCE

Sil, P, Mateos N, Nath S, Buschow S, Manzo C, Suzuki KGN, Fujiwara T, Kusumi A, Garcia-Parajo MF, Mayor S (2020). Dynamic actin-mediated nano-scale clustering of CD44 regulates its meso-scale organization at the plasma membrane. *Mol Biol Cell* 31, 561–579.