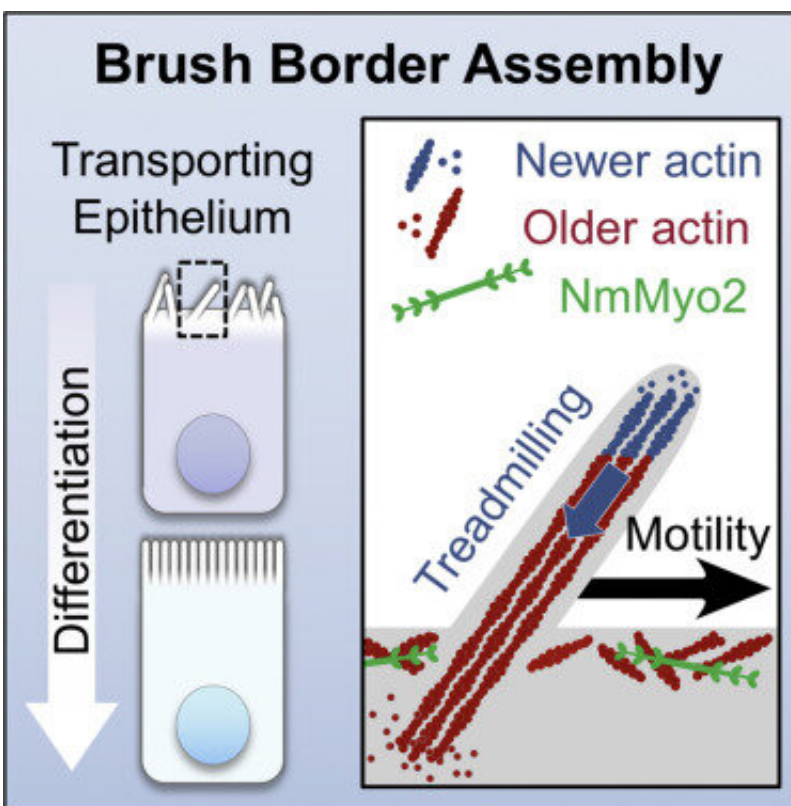


Microvilli in motion: Live cell imaging to visualize early steps of brush border formation

September 23 2019, by Anivarya Kumar



Graphical Abstract DOI: <https://doi.org/10.1016/j.devcel.2019.07.008>

Microvilli are protrusions on the surface of epithelial cells that are dedicated to mechanosensation in the inner ear, and chemosensation and solute uptake in the lungs, gut, intestine and urinary tract. Epithelial cells

assemble dense arrays of microvilli called "brush borders" that protect against infections and injury.

Leslie Meenderink, MD, Ph.D., Matthew Tyska, Ph.D., and colleagues used live cell imaging to visualize early steps of brush border formation.

They found that individual microvilli exhibit persistent active motility. Driven by actin assembly at the barbed ends of core bundles, [microvilli](#) motility allows the protrusions to collide and cluster into highly organized arrays.

The research, featured on the cover of the Sept. 9 issue of *Developmental Cell*, points to microvillar motility as a previously unrecognized driving force for apical surface remodeling and maturation during epithelial differentiation. These findings provide further insight into the morphogenesis of multiple organ systems.

More information: Leslie M. Meenderink et al. Actin Dynamics Drive Microvillar Motility and Clustering during Brush Border Assembly, *Developmental Cell* (2019). [DOI: 10.1016/j.devcel.2019.07.008](#)

Provided by Vanderbilt University

Citation: Microvilli in motion: Live cell imaging to visualize early steps of brush border formation (2019, September 23) retrieved 27 April 2024 from <https://phys.org/news/2019-09-microvilli-motion-cell-imaging-visualize.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--