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EDITORIAL

2019 Cytoskeleton Paper of the Year: A revised order of subunits in mammalian septin complexes

Cytoskeleton is pleased to announce the 2019 paper of the year. The paper is "A revised order of subunits in mammalian septin complexes" by Deborah C. Mendonca, Joci N. Macedo, Samuel L. Guimaraes, Fernando L. Barroso da Silva, Alexandre Cassago, Richard C. Garratt, Rodrigo V. Portugal, Ana P. U. Araujo. https://onlinelibrary.wiley.com/doi/abs/10.1002/cm.21569?af=R. In this short report, the authors present the results of structural studies which were performed to determine the order of subunits in the septin oligomer. Septins are filament forming, GTP binding proteins in eukaryotic cells that contribute to a range of biological processes, including cytokinesis and cell morphology. A commentary piece "Turning it inside out: The organization of human septin heterooligomers"https://onlinelibrary.wiley.com/doi/10.1002/cm.21571 by Michael A. McMurray and Jeremy Thorner, published along with the research article, provides a very interesting discussion of the new findings.

The Mendonca et al work is exceptional because the author's results, and those of another recent study https://www.biorxiv.org/content/10.1101/569871v1, demonstrate that the commonly accepted model for how subunits are organized within the rod shaped, filament forming septin oligomer needs to be revised. The work is a clear reminder that scientists need to continually challenge and refine the accepted dogma in our fields of study. I recommend this article, along with the Commentary piece, and encourage you to consider it for discussion at lab meetings and journal clubs this year. When reading this article, students will see how assumptions need to be challenged and how improvements in techniques used to perform cell biological experiments allow us to advance and extend earlier work.

I thank the authors for their fine contribution and additionally thank Drs. McMurray and Thorner for providing a thought-provoking commentary.

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