

BIOLOGICAL CHEMISTRY

*Founded in 1877 by Felix Hoppe-Seyler as
Zeitschrift für Physiologische Chemie*

Felix Hoppe-Seyler (1825–1895) was a pioneer of biochemistry, remembered not only for his discovery of hemoglobin and his contributions to the chemical characterization of many other biological compounds and processes but also for having been the mentor of Friedrich Miescher and Albrecht Kossel. In his preface to the first issue of *Zeitschrift für Physiologische Chemie*, Felix Hoppe-Seyler coined the term *Biochemistry* ('Biochemie') for the then newly emerging discipline.



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COVER ILLUSTRATION

Understanding the relationships between formation of protein complexes in particular time and in particular cellular space, as well as biological function, remains a primary focus in diverse fields of biology. In the budding yeast *Saccharomyces cerevisiae*, septins form different higher-order structures at the mother-bud neck depending on the particular stage of the cell cycle. A variety of proteins are involved in the control of septin organization. Two of these proteins, Gic1 and Bni5, are localized at the bud neck at different stages of the cell cycle. Shown on the cover is the localization of Cdc11 (upper panels, blue), Gic1 (middle panels, yellow) and Bni5 (lower panels, red), visualized by epifluorescence microscopy. Bni5-septin complexes display a regular railroad-like structure with several cross-linked filaments bundled together, which resembles the previously described Gic1-septin structures. Bni5 or Gic1 stabilize the structure of septins at the bud neck and contribute to the formation of the immobile state of the septin cytoskeleton at particular stages of the cell cycle. The activity of Elm1 protein kinase in the presence of Bni5 leads *in vitro* to a partial depolymerization of septin filaments. Bni5 may participate in the long filament disassembly at the time of “hourglass”-to-double ring transition, important for the onset of cytokinesis, by recruiting Elm1 kinase to the septin filaments. The results presented in the article by Patasi et al. on pp. 1325–1337 in this issue contribute to our understanding of how specific protein-protein interactions lead to changes in the higher-order structures of septins.

Image courtesy of Marian Farkašovský, Institute of Molecular Biology SAS, Bratislava, Slovak Republic.



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