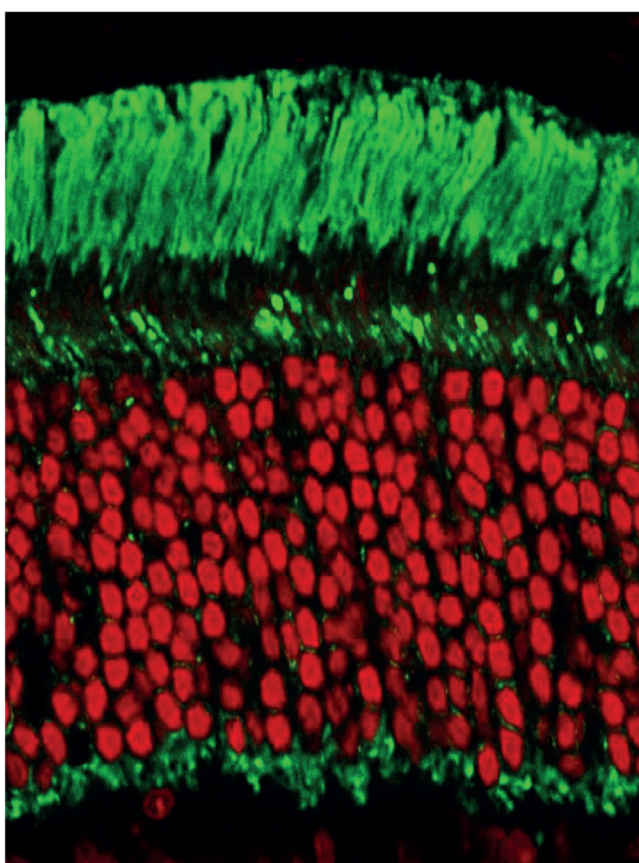
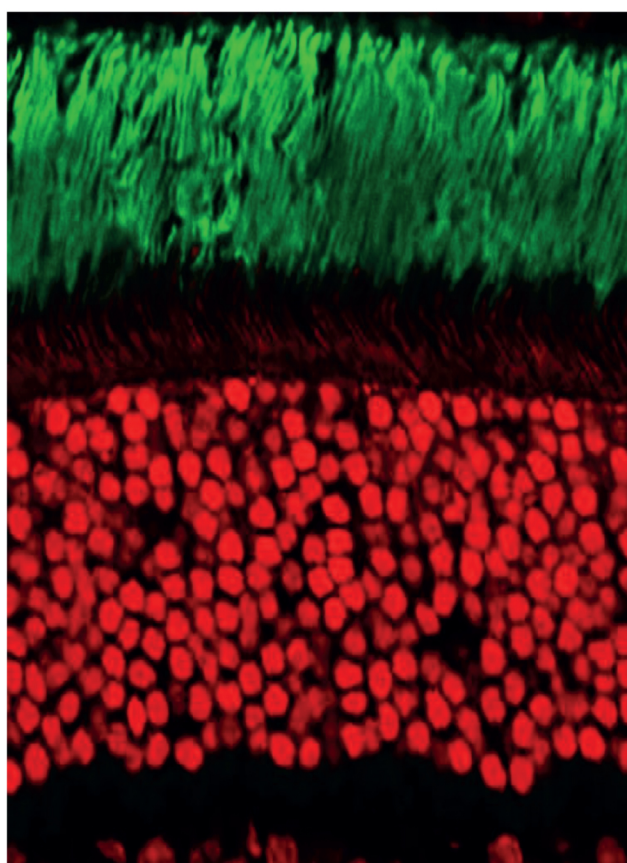


BIOLOGICAL CHEMISTRY



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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

In their review article on pp. 573–584 in this issue, Frederick et al. discuss transport mechanisms of prenylated proteins from the retina rod photoreceptor inner segment to the outer segment mediated by the solubilization factor, PDE δ . Shown on the front cover is the transport of heterotetrameric cGMP phosphodiesterase 6 (PDE6 $\alpha\beta\gamma\gamma$). Wildtype (left panel) mouse retina cryosection probed with antibody (MOE) directed against heterotetrameric PDE6 reveals that PDE6 (green) normally distributes to the rod outer segment. When PDE δ is absent (right panel), some PDE6 mislocalizes to the inner segment and synaptic terminals, while most PDE6 transports correctly to the outer segment. PDE6 and rhodopsin reside transiently in the ER postbiosynthesis. In the PDE δ knockout, the authors propose that partially insoluble PDE6 may ‘hitchhike’ aberrantly in vesicles loaded with rhodopsin, transducin and other proteins of the secretory pathway, a pathway predicted to be PDE δ - and ARL3-GTP-independent.

Images courtesy of Wolfgang Baehr, Department of Ophthalmology and Visual Sciences, University of Utah, Salt Lake City, USA. Originally published in Zhang, H., Li, S., Doan, T., Rieke, F., Detwiler, P., Frederick, J.M. and Baehr, W. Deletion of PrBP/ δ impedes transport of GRK1 and PDE to photoreceptor outer segments. *Proc. Natl. Acad. Sci. USA* 104 (2007), pp. 8857–8862, Reproduced with permission of the National Academy of Science (NAS).



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