EUKARYOTIC CELL

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Cover photograph (Copyright © 2007, American Society for Microbiology. All Rights Reserved.): Immunolabeling of the ciliate *Paramecium tetraurelia* with anti-centrin antibodies reveals a cortical cytoskeletal network, the infraciliary lattice (ICL), composed of centrins and of a large centrin-binding protein which forms its backbone. The ICL provides a model to study centrin-based Ca^{2+}-dependent contractility, a function thought to be involved in the dynamic process of spindle pole body/centrosome duplication. When a living paramecium is exposed to aminoethyldextran, which causes a transient Ca^{2+} influx, the ICL contracts, resulting in a transient (ca. 30 s) cell shortening. The two cells illustrate the striking shifts in cell shape (observable in vivo) and in ICL organization. *(See related article on page 1992.)*