January 25, 2011 | vol. 108 | no. 4 | 1195–1746

PNAS

Proceedings of the National Academy of Sciences of the United States of America www.pnas.org

Cover image: Pictured is a scanning electron microscope image that shows wild-type *Yersinia pseudotuberculosis* (green) attached to the surface of cultured HeLa cells. Pathogenic *Yersinia* species use a type III secretion system (T3SS) to translocate virulence proteins into the cytosol of target cells. Karen Akopyan et al. demonstrate that the putative one-step T3SS translocation can be accomplished in vitro via two steps that are mediated by intermediate extracellular effector proteins. See the article by Akopyan et al. on pages 1639–1644. Image courtesy of Roland Rosqvist, Per Hörstedt, and Karen Akopyan (Umeå University, Umeå, Sweden); and Stefan Gunnarsson (Uppsala University, Uppsala).

From the Cover

Contents

CELL BIOLOGY

DEVELOPMENTAL BIOLOGY

MEDICAL SCIENCES

MICROBIOLOGY

NEUROSCIENCE

PHARMACOLOGY

PHYSIOLOGY