Rho family GTPases

IT IS NOW CLEAR that the Rho family GTPases are important regulators of many cellular functions. In particular, Rho, Rac, and Cdc42 are well-known regulators of the actin cytoskeleton and of cell contraction, adhesion, migration, gene transcription, differentiation, and proliferation. Rho family GTPases also participate in the regulation of cell polarity, microtubule dynamics, vesicular transport, phagocytosis, and activity of various enzymes, such as NADPH oxidase. Whereas the coordinated regulation of signal transduction pathways by Rho family GTPases is essential for many normal cell activities, inappropriate activation of these molecular switches contributes to the pathogenesis of several diseases. This issue of *AJP–Lung Cellular and Molecular Physiology* features six research articles that were submitted to a call for papers on Rho GTPases in lung physiology and disease; four are on regulation of pulmonary vascular tone, and two are on regulation of airway smooth muscle tone. In addition, we were fortunate to have Dr. Jim Sylvester write an insightful commentary about these articles. We hope this focus stimulates additional investigation on the roles of Rho family GTPases in the regulation of normal lung function and the pathogenesis of lung diseases.

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