

PRIMARY CILIA



Edited by

Roger D. Sloboda

Department of Biological Sciences, Dartmouth College, Hanover, NH, USA

In recent years, the role of cilia in the study of health, development and disease has been increasingly defined, and new discoveries have made this an exciting and important field of research. This comprehensive volume presents easy-to-follow protocols and detailed background information for researchers working with cilia and flagella.

KEY FEATURES

- Covers protocols for primary cilia across several systems and species
- Both classic and state-of-the-art methods readily adaptable across model systems, and designed to last the test of time
- Relevant to clinicians and scientists working in a wide range of fields

Cover image: Prof. Karl Wilhelm Zimmermann in his laboratory at the Anatomical Institute of the University of Berne, in Switzerland. In 1898, Zimmermann observed the 'central flagellum' (i.e. the primary cilium) associated with the distal centriole of the diplosome and inferred that the primary cilium would have to be removed to free the centrioles to participate in mitosis. He also suggested that the primary cilium had a sensory role. Although Zimmermann is often credited with the first observation of the primary cilium, this tiny organelle, slightly larger in diameter than the limit of resolution of the light microscope, had been reported 50 years earlier!

See chapter one by Robert Bloodgood in this volume for a terrific review of this older literature. The associated drawing is from Zimmermann (1898) showing a primary cilium in a cell from a rabbit kidney tubule epithelium. In addition to exceptional powers of observation, a trait possessed by perhaps all successful cytologists of a century ago, Zimmermann also trained as an artist before entering medical school.

Volume 94 of **METHODS IN CELL BIOLOGY**

Series Editors: Leslie Wilson and Paul Matsudaira



ACADEMIC PRESS

An imprint of Elsevier
elsevierdirect.com

ISBN 978-0-12-375024-2



9 780123 750242