

PREFACE

The observation that the living cell contains a mechanism to sense and correct the accumulation of unfolded (or incorrectly folded) proteins in the endoplasmic reticulum was formidable in organizing thoughts about cellular integration. This mechanism both halts further protein synthesis and promotes the production of chaperone proteins that act to relieve this problem. If this problem cannot be corrected, the mechanism can initiate programmed cell death. Aspects of this unfolded protein response (UPR) are conserved from yeast to man, an observation that suggests a key role in the process of maintaining a living cell.

The UPR presents a way of understanding cellular regulation, a mechanism for disease, and a therapeutic opportunity.

The present volume provides descriptions of the occurrence of the UPR, methods used to assess it, and pharmacological tools and other methodological approaches to analyze its impact on cellular regulation. The authors explain how these methods are able to provide important biological insights.

Authors were selected based on research contributions in the area about which they have written and based on their ability to describe their methodological contribution in a clear and reproducible way. They have been encouraged to make use of graphics, comparisons to other methods, and to provide tricks and approaches not revealed in prior publications that make it possible to adapt methods to other systems.

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P. MICHAEL CONN
Portland, Oregon, USA