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Book Reviews

Stress-Induced Proteins – UCLA Symposia on Molecular and Cellular Biology, New Series vol. 96; Edited by M.L. Pardue, J.R. Feramisco and S. Lindquist; Alan R. Liss, New York, 1989; 294 pages; $62.00

It is now well accepted that the heat shock response is a fundamental homeostatic mechanism that allows cells of animal, plant and bacterial origin to survive a variety of environmental stresses. This volume is the outcome of a 1988 UCLA Symposium at Keystone focussing on this as yet young research discipline. A variety of molecular biological aspects of both stressed and normal cells is explored, from the responses at the level of individual cells to the importance of the phenomenon in the complex physiology of multicellular organisms. Particular emphasis is placed on new information regarding the possible functions of heat shock proteins in *non-stressed* cells. New insights are presented on the mediation of several types of protein–protein interactions involving heat shock proteins. In addition a foretaste of future research directions is provided by recent observations that a large component of anitbodies raised against various pathogens are directed against specific heat shock proteins of these pathogens.

The compilation comprises 23 contributions and is conveniently divided into 6 sections as follows: (i) Regulation of the stress response in prokaryotes, physiological inducers as well as mechanisms of transcriptional regulation; (ii) Regulation of the stress response in eukaryotes including the heat shock transcription factor, heat shock protein gene chromatin structure, genes involved in heat shock response regulation and protein degradation in stressed cells; (iii) Function of heat shock proteins illustrating the interaction of heat shock proteins with steroid receptors as well as their role in post-translational protein translocation; (iv) Metabolism of RNA in stressed cells including the role of RNPs and post-transcriptional regulation; (v) Development of thermotolerance and resistance to anticancer drugs after stress; (vi) Clinical relevance in relation to cancer treatment protocols and heat-shock proteins as antigens in infectious diseases.

Although there are only a few typographical errors, perhaps the most entertaining is the section heading on p.215, viz. Thermotolerase (one can't help wondering whether this particular enzyme may be the most important heat-shock protein for future study).

On the whole this is a useful and timely publication. There is always a need, in a rapidly developing field that covers such a wide spectrum of biology, for the regular publication of summative volumes such as this. It will be a reliable source of up-to-date information for researchers in the fields of molecular biology, cell biology, biochemistry, immunology, genetics and physiology.

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