

Beyond Carrier Proteins: Integrative and Evolutionary Roles of Hormone-Binding Proteins

A special section consisting of proceedings from the above symposium which took place during the 2002 Annual Meeting of The Society for Integrative and Comparative Biology, Anaheim, CA, USA, 4 January 2002

FOREWORD

Endocrinologists will require little convincing that the subject of hormone action is a very complex one including many aspects, such as expression and binding of receptors, and intracellular signaling pathways. However, there is one functionally important 'player' in hormone action that does not seem to receive widespread appreciation, even among endocrinologists, and that is the hormone-binding protein (HBP). It was the goal of this symposium to promote recognition of HBPs as centrally positioned regulators with essential roles in the integration of physiological processes in many endocrine systems, as well as in endocrine system evolution.

The HBP – for the purposes of this symposium – was defined as a protein that at some point resides in extra-cellular fluids and has regulatory/integrative impacts on endocrine systems. The emphasis was to look beyond the role of HBPs as carrier proteins and, rather, to pursue emerging concepts of HBPs as multifunctional regulatory proteins. Of particular interest were HBPs that have developed specialized properties or roles beyond that of primary hormone binding. These may include hormone-independent (direct) actions, interactions with the cell surface or with other endocrine/regulatory systems, and hypothetical roles of HBPs in the evolution of endocrine systems in animal taxa. The plenary speakers, noted experts in their respective fields, served as ambassadors for their HBP(s) of interest, and presented their research on both specific mechanisms involving HBPs and in a general context. This approach, reaching for cross-cutting and theoretical aspects of the biology of HBPs, proved to be a valuable and enriching exercise. It is hoped that the event and its publication will help to increase recognition of the importance of HBPs.

The symposium was held at the 2002 Annual Meeting of the Society for Integrative and Comparative Biology (SICB; www.sicb.org), hosted by the Division of Comparative Endocrinology of the Society. The SICB and the Division have a long and notable history of commitment to, and emphasis on, the basic biology of endocrine systems. As such, it was fitting that a symposium of this nature was held at the SICB meeting, which occurred on the first week of this year in southern California.

The organizers would like to thank each of the plenary speakers for putting in the time and effort that made this symposium an obvious success. Their subsequent production of the thought-provoking papers that follow herein will

allow the symposium to reach a greater audience, serving as a lasting and valuable resource for endocrinologists and other interested scientists. A limited number of these special issues are available as single-purchase copies, which can be obtained by contacting *Journal of Endocrinology*.

The National Science Foundation (NSF, USA) provided a significant proportion of the financial support for this symposium (grant #IBN-0125180). The NSF's vision and commitment to basic biology were exemplified by Dr William E Zamer (Program Director, Division of Integrative Animal Biology & Neuroscience), whose interest in, and efforts on behalf of, this symposium are gratefully acknowledged. The SICB also provided significant support for this symposium, both financially and through various services at the annual meeting itself. Generous donations were given by Amersham BioSciences (Piscataway, NJ, USA), Cayman Chemical Company (Ann Arbor, MI, USA) and the California State University Program for Education and Research in Biotechnology (CSUPERB).

Finally, the organizers would like to recognize Dr Howard A Bern (University of California at Berkeley), who has in his notable career set the standard for cross-cutting thinking in endocrinology.

*Kevin Kelley
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Chairmen*