

## *Calcium and The Cell*

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Edited by D. Evered and J. Whelan

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Over the past decade a great deal has been written about the role of  $\text{Ca}^{2+}$  as a component of cellular signal transduction mechanisms. Whole texts and an entire review series have been devoted to this area, while the topic has been examined to exhaustion in meeting after meeting. What value then exists in one more series of articles devoted to the cellular function of calcium and based on the proceedings of yet another such meeting? The answer to this question will already be known in large part to those familiar with the Ciba Foundation's well-established reputation for the organisation and recording of small high-quality conferences, which typically bring together participants with a wide range of expertise. 'Calcium and The Cell' is no exception to this rule with the chapters ranging from the physics and chemistry of calcium binding proteins (R.J.P. Williams) to calcium and morphogenesis (L. Jaffe). In between these extremes  $\text{Ca}^{2+}$  influx by voltage-dependent (Reuter) and exchange (Baker) mechanisms and intracellular  $\text{Ca}^{2+}$  mobilisation (Berridge, Schneider) are thoroughly examined as well as the properties and structure of the systems responsible for pumping of  $\text{Ca}^{2+}$  against a concentration gradient (Carafoli, Green). Another group of articles is concerned with the role of various  $\text{Ca}^{2+}$  binding proteins in  $\text{Ca}^{2+}$  dependent processes such as calmodulin (Klee), troponin C (Herzberg) and protein kinase C (Nishizuka). The roles of  $\text{Ca}^{2+}$  in growth regulation, exocytosis and cytoskeletal function are considered respectively by Moolenaar, Knight and Mooseker. Although calcium is in the forefront of

all the contributions the themes of heterogeneous intracellular distribution of  $\text{Ca}^{2+}$  and of interaction of this cation with other factors constantly recur both in the articles and in the discussions which follow them. This theme is set in characteristic fashion by the late Peter Baker in his introduction in which he suggests that buffering within the cell severely limits the extent to which  $\text{Ca}^{2+}$  concentration can change, hence emphasising the importance of mechanisms which alter the  $\text{Ca}^{2+}$  sensitivity of processes and of localised changes in  $\text{Ca}^{2+}$  concentration.

The discussion sections which are often the most useful part of these publications are as interesting and provocative as ever. They will repay detailed examination by those workers interested in cellular roles of calcium and in the interplay of this second messenger with other systems. Inevitably, much attention is paid to interrelationships of  $\text{Ca}^{2+}$  with phosphoinositides and guanine nucleotide binding proteins given the nature of the participants and the current level of interest in this area. However, the discussions are by no means solely dominated by these relationships and reflect the multidisciplinary nature of the participants at this conference which must be one of its most attractive features.

I shall value this volume as an addition to a growing series of books devoted to cellular roles of  $\text{Ca}^{2+}$  and am happy to recommend it to others interested in this important area of research.

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