
Preface

Why are we writing this book? It is mostly because, while the field had a slow start from its inception in 1972, it has now exploded in many directions and newcomers will find it difficult to find what they need in the huge purinergic literature—there are over 300,000 reprints in my office. The discovery of non-adrenergic, non-cholinergic neurotransmission in the 1960s in Melbourne was followed by the search for the transmitter involved and to our surprise, as well as that of others, ATP rather than neuropeptides, monoamines or amino acids, turned out to satisfy the criteria needed to establish the identity of a neurotransmitter and soon after a cotransmitter together with classical transmitters. It was a tough time defending this hypothesis during the next 20 years. For example, when I left Australia for London in 1975, at my farewell party, the Professor of Medicine said ‘Geoff Burnstock is the inventor of the purinergic hypothesis’! I think that the turning point for the acceptance of purinergic signalling came in the early 1990s when we, and others, cloned and characterised the receptors for ATP. Since then, the field has exploded in many different directions: the recognition that ATP was an ancient signalling molecule utilised early in evolution; the distribution of functional purinoceptors in most cells in the body, the pathophysiological roles of purinergic signalling, and most recently the development of therapeutic strategies for a wide variety of diseases.

In these two volumes we have tried to cover every aspect of this burgeoning field, with a historical approach identifying seminal papers as well as describing the most recent discoveries. The first volume is focussed on the nervous system and special senses, the second on the roles of purines and pyrimidines on non-neuronal cells in respiratory, cardiovascular, endocrine, urinogenital, skeletal, immune and gastrointestinal systems in health and disease. The publishers have fortunately agreed to publish each chapter with references, so that readers can pull out single chapters of special interest to them online. Alex and I very much hope that this ambitious adventure will be helpful to those interested in this exciting field.

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