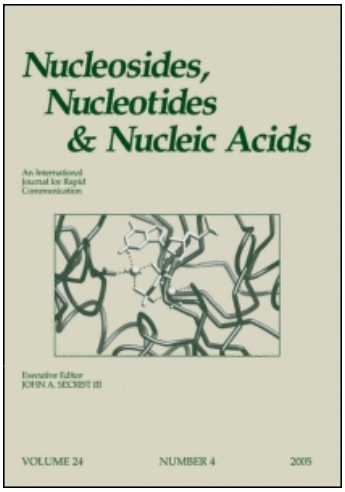

Nucleosides, Nucleotides and Nucleic Acids
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713597286

Preface

A. P. Ijzerman; P. J. M. van Galen

To cite this Article Ijzerman, A. P. and van Galen, P. J. M.(1991) 'Preface', Nucleosides, Nucleotides and Nucleic Acids, 10: 5, xi — xii
To link to this Article: DOI: 10.1080/07328319108047229
URL: http://dx.doi.org/10.1080/07328319108047229

NUCLEOSIDES & NUCLEOTIDES, 10(5), xi-xii (1991)

PREFACE

Probably the most cited paper on the actions of adenosine is the original study of Drury and Szent-Györgyi[1]. It was published as early as 1929 and it focusses on the physiological effects of some adenine compounds, notably adenosine and adenylic acid, i.e. AMP. The authors, working together in Cambridge, UK, described in detail many of the most prominent pharmacological actions of adenosine known today, such as its effects on the cardiovascular system. Although Drury and Szent-Györgyi may have been the first pharmacologists paying attention to adenosine, the chemistry of adenosine was worked on even earlier[2].

Back in the 1860s Friedrich Miescher, a Swiss physician, started work on the chemistry of the cell and its nucleus. As a source for cell nuclei he used white blood cells which he extracted from pus, present in discarded bandages of a nearby surgical hospital. With the aid of an extract of pig's stomach (containing the proteolytic enzyme pepsine) Miescher was able to digest the membranes of the white blood cells and to isolate the nuclei. Alkaline extraction yielded a phosphorous-containing acidic compound which he coined 'Nuclein' in his seminal paper 'Űber die chemische Untersuchungen von Eiterzellen', published in 1871. Nuclein, or nucleic acid as it was later called by other authors, was subsequently shown to be present in numerous tissues of both animal and plant origin. Isolation and structure elucidation of the nucleobases adenine, thymine, cytosine and guanine was mainly the work of Kossel, Miescher's successor, and of Fisher and Traube, respectively, all in the years 1882 - 1907. Levene, a disciple of Kossel, should be honoured for the isolation of adenosine in 1909. He also showed that adenosine consists of an adenine and a D-ribose moiety, linked at the N9- and C1'-position, respectively. The total syntheses of adenosine and ATP were only achieved in 1948 by Todd.

The scope of the symposium 'Pharmacology of purinergic receptors. Implications for drug design' was both on pharmacology and chemistry, just like Miescher experienced in the 19th century, who did not even discriminate between the two disciplines. Thus, special emphasis was laid on the interplay between biochemistry/pharmacology and medicinal chemistry/drug design in the field of receptors for adenosine and adenine nucleotides, and nucleoside transport proteins. The perspectives of these proteins as targets for future drugs were also highlighted. The symposium was organized under the auspices of the Center for Bio-Pharmaceutical Sciences of Leiden University, an institute primarily aimed at multidisciplinary drug research, also in collaboration with the pharmaceutical industry. The conference was held in Noordwijk, The Netherlands, from 6 - 8 July, 1990, as a satellite to the XIth IUPHAR International Congress of Pharmacology.
This special issue of 'Nucleosides & Nucleotides' contains the manuscripts of the main lectures and oral communications, together with extended abstracts of most poster contributions.

Leiden, August 1990

A. P. IJzerman
P. J. M. van Galen

References

1. Drury AN and Szent-Györgyi A. J. Physiol. (London) **68** (1929), 213 - 237.
2. Ts'o POP. In: Basic principles in nucleic acid chemistry (Ts'o POP, ed), Academic Press, New York (1974), pp. 1 - 92.