

Editorial

Preface to the Special Issue on Sialic Acids

Sialic acids occur in many animal and microorganism species and play a role in a variety of areas in the life sciences. This has been documented in numerous publications in various journals, from chemistry to medicine, and sialic acids are increasingly mentioned at scientific meetings, and not only in those specializing in carbohydrates and glycoconjugates. Furthermore, the significance of these substances is demonstrated by the rapidly increasing number of companies all over the world that produce sialic acids and related compounds.

It is the aim of this special issue to bring together publications which deal with various aspects of research on sialic acids. In this way the great scientific and practical potential, inherent in these sugars, should find interested readers. Representative manuscripts of the 'hottest' areas have been submitted. These come from sialic acid metabolism, where our knowledge of sialyltransferases, sialidases, sialate *O*-acetyl esterases and sialic acid-modifying enzymes, including some inhibitors, is quickly growing. A contribution has also been made to the regulation of sialic acid metabolism resulting from gene expression, showing the rapid expansion of molecular biology in glycoconjugate research.

An important field that certainly will also continue to

expand is the role of sialic acids in cell adhesion. Here, the main function of sialic acid was considered earlier to prevent cellular interaction, i.e. to mask other sugars involved in recognition, e.g. galactose, or of immunogenic domains on cell surfaces. However, evidence is accumulating that sialic acids frequently are also directly involved in recognition and binding, for instance mediated by selectins and sialoadhesin, similar to bacterial and viral hemagglutinins. These molecules are not only involved in physiological, but also in pathological processes. Therefore, in a growing number of laboratories more time is focused on chemical synthesis, partly in combination with enzymatic means, of suitable carbohydrate ligands for these lectins. Very interesting contributions to these aspects have also been made.

This issue will hopefully stimulate experiments and the development of new methods to elucidate further the unanswered questions in sialobiology.

I want to thank all authors and referees for their efforts to make this issue a valuable contribution to a special field of glycoconjugate research. I especially thank the Chief Editor, Dr Alan Chester, for the suggestion of this special issue and his expert editorial help, and Chapman & Hall for their support.

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