



CARBOHYDRATE RESEARCH

An International Journal of Molecular Glycoscience

AUTHOR INFORMATION PACK

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DESCRIPTION

Carbohydrate Research publishes reports of original research in the following areas of carbohydrate science: action of enzymes, analytical chemistry, biochemistry (biosynthesis, degradation, structural and functional biochemistry, conformation, molecular recognition, enzyme mechanisms, carbohydrate-processing enzymes, including glycosidases and glycosyltransferases), chemical synthesis, isolation of natural products, physicochemical studies, reactions and their mechanisms, the study of structures and stereochemistry, and technological aspects.

Papers on polysaccharides should have a "molecular" component; that is a paper on new or modified polysaccharides should include structural information and characterization in addition to the usual studies of rheological properties and the like. A paper on a new, naturally occurring polysaccharide should include structural information, defining monosaccharide components and linkage sequence.

Papers devoted wholly or partly to X-ray crystallographic studies, or to computational aspects (molecular mechanics or molecular orbital calculations, simulations via molecular dynamics), will be considered if they meet certain criteria. For computational papers the requirements are that the methods used be specified in sufficient detail to permit replication of the results, and that the conclusions be shown to have relevance to experimental observations - the authors' own data or data from the literature. Specific directions for the presentation of X-ray data are given below under Results and "discussion".

AUDIENCE

Chemists, Biologists, Biochemists and Medical Researchers/Scientists involved in studies of molecular aspects of glycoscience.

IMPACT FACTOR

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INTRODUCTION

Carbohydrate Research publishes reports of original research in the following areas of carbohydrate science: action of enzymes, analytical chemistry, biochemistry (biosynthesis, degradation, structural and functional biochemistry, conformation, molecular recognition, enzyme mechanisms, carbohydrate-processing enzymes, including glycosidases and glycosyltransferases), chemical synthesis, isolation of natural products, physicochemical studies, reactions and their mechanisms, the study of structures and stereochemistry, and technological aspects.

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Notes - these are concise but complete descriptions of an investigation of a limited scope that will not be included in a later paper.

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The body of the *text* (including tables, charts, and figures, and a bibliography). Typically the body comprises sections labelled Introduction, Results and discussion, and Experimental, but this specific structure is not obligatory. Authors are free to vary the organization of articles as needed for optimal presentation of their subject matter.

Divide your article into clearly defined and numbered sections. Subsections should be numbered 1.1 (then 1.1.1, 1.1.2, ...), 1.2, etc. (the abstract is not included in section numbering). Use this numbering also for internal cross-referencing: do not just refer to "the text". Any subsection may be given a brief heading. Each heading should appear on its own separate line.

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Abstract

A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

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Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

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This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Nomenclature and units

Chemical and Biochemical Nomenclature

The nomenclature of all carbohydrates and glycoconjugates should follow the recommendations of the IUPAC-IUBMB Joint Commission on Biochemical Nomenclature: "Nomenclature of Carbohydrates (Recommendations 1996)" published in *Pure Appl. Chem.*, **1996**, 68, 1919-2008 as well as *Carbohydr. Res.* **1997**, 297, 1-92 and elsewhere, including the World-Wide Web at <http://www.chem.qmul.ac.uk/iupac/2carb/>.

For visual representation of glycan structures, authors are strongly recommended using the Symbol Nomenclature for Glycans (SNFG) that can be found at <https://www.ncbi.nlm.nih.gov/books/NBK310273/>. All figures depicting glycans with symbols for monosaccharides are required to follow the shapes and colors presented in the current version of the SNFG. Please cite *Glycobiology* 25: 1323-1324, 2015. <https://doi.org/10.1093/glycob/cwv091> <https://www.ncbi.nlm.nih.gov/pubmed/26543186>.

Symbol Nomenclature for Glycans

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Title Compounds

3.1.1. Methyl 6-*O*-*tert*-butyldimethylsilyl- β -D-allopyranoside (4).

Note that the (numbered) compound is an example of a *title compound*, which should satisfy certain criteria if it is to be listed this way. Convincing evidence for identity and purity must be presented for all new carbohydrate derivatives listed as *title compounds*. Ordinarily, identity is established by NMR and mass spectral data. As evidence of purity authors are required to include an elemental (combustion) analysis (minimally C and H), with values deviating from the theoretical not more than 0.4% absolute. When a C and H analysis is not feasible (e.g., very small amounts of material available), the criteria used to assess purity should be specified; these should include NMR observations (absence of extraneous lines in a spectrum run at high sensitivity) and chromatographic data (GLC, HPLC, or TLC at high sensitivity). Also desirable are *m/z* values from mass spectra.

It is not expected that all the intermediates in a synthetic sequence will be purified to the point of giving satisfactory elemental analyses. Many compounds will be used in a subsequent step without being refined to ultimate purity. However, the description of the preparation of such compounds should be consolidated with the description of the next title compound in the series.

Nomenclature

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If there are published physical constants (mp, $[\alpha]_D$, λ_{max} , etc.) for the compound these should be cited, using the following format:

...allyl 2-acetamido-2-deoxy- $[\alpha]$ -L-glucopyranoside (1a): mp 175176 C, lit.⁶ 172174 C; $[\alpha]_D^{25}$

+155 (c 1.43, water), lit.⁶ +149; ¹H NMR...

NMR data. NMR data may be presented in either tables or in the text. Tables are preferred for complex NMR assignments and for series of compounds with full assignments. Full assignments are encouraged using 2D NMR techniques, especially for large, complex structures. For listings as running text please adhere strictly to a uniform style. The following is the preferred format:

¹H NMR (CDCl₃): δ 7.35 (d, 1H, $J_{3,4}$ 2.0 Hz, H-3), 5.10 (dd, 1H, $J_{4,5}$ 4.0 Hz, H-4), 4.40 (ddd, 1H, $J_{5,6a}$ 6.5, $J_{5,6b}$ 5.5 Hz, H-5),...

Additional conventions used in describing higher order data include, for example, the designation of peaks in COSY spectra: Man H-1,2; HOHAHA tracking: GlcNAc H-2,3,4,5,6a,6b etc.; NOE contacts: Glc H-1, Xyl H-4,5e, etc. For designating resonances in oligosaccharides, the sugar units should be numbered with Roman numerals I, II, III, etc. beginning at the reducing(upstream) end of the molecule. (See IUPAC Nomenclature for Carbohydrates, 2-CARB-37.2.)The individual resonances are numbered with Roman numeral superscripts as, for example, the following: H-3^I, H-3^{II}, H-3^{III}.

^1H (signals and coupling constants assigned) and ^{13}C NMR data are required for all synthetic compounds and must be included as electronic supporting information. A minimum of three pieces of analytical data are required for all known compounds, while five pieces of data are required for all new compounds. The latter must include either C and H analysis or high resolution mass spectrometry data.

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Elemental analysis data

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