



CARBOHYDRATE RESEARCH

An International Journal of Molecular Glycoscience

AUTHOR INFORMATION PACK

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DESCRIPTION

Carbohydrate Research publishes outstanding and timely research reports on **molecular aspects of carbohydrate chemistry, biochemistry, chemical biology and glycobiology.**

Areas of interest include:

- Sugars, glycosides and their derivatives; oligo- and poly-saccharides; glycoconjugates
- Chemical and enzymatic synthesis of carbohydrate-containing molecules.
- Isolation and structural characterization of novel carbohydrate-containing molecules
- Experimental and theoretical studies on structure, dynamics and mechanism
- Analytical chemistry and biochemistry, including molecular probes
- Studies of carbohydrate-processing, including enzyme action, mechanism and inhibition
- Glycobiology, glycan metabolism and biosynthesis
- Glycomics and glycoinformatics
- Molecular aspects of glycoimmunochemistry
- Molecular aspects of glyconanoparticles and carbohydrate materials

The journal includes full-length research papers, reviews and notes, all of which are subjected to rigorous peer review prior to acceptance.

The editors have compiled a selection of articles, which reflect the redefined scope of Carbohydrate Research - we invite you to view the selection [here](#) and download the articles for free for a limited time.

AUDIENCE

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

IMPACT FACTOR

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INTRODUCTION

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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".

Types of paper

Contributions to *Carbohydrate Research* may be in the form of the following article types:

Full Papers - these should be substantial completed pieces of original research that are of significance and which, in addition, are presented clearly and concisely.

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

Mini-Reviews - these are critical reports reviewing important research in that field. While manuscripts usually are submitted at the invitation of Editors, contributions can be made by interested individuals if they contact an Editor to ensure that a suggested topic is both suitable and not already in process. Mini-reviews are often solicited for a Special Issue on a particular topic.

Link to full guide for authors

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All necessary files have been uploaded:

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- All tables (including titles, description, footnotes)
- Ensure all figure and table citations in the text match the files provided
- Indicate clearly if color should be used for any figures in print

Graphical Abstracts / Highlights files (where applicable)

Supplemental files (where applicable)

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- Journal policies detailed in this guide have been reviewed
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Article structure

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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.

Essential title page information

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Chemical compounds studied in this article

Ethylene glycol (PubChem CID: 174); Plitidepsin (PubChem CID: 44152164); Benzalkonium chloride (PubChem CID: 15865)

[More information.](#)

Acknowledgements

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.).

Formatting of funding sources

List funding sources in this standard way to facilitate compliance to funder's requirements:

Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].

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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: 13231324, 2015. doi: 10.1093/glycob/cwv091 <https://www.ncbi.nlm.nih.gov/pubmed/26543186>.

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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

Listing of Physical Data. The preferred order is: mp (if applicable); $[\alpha]_D$ (normally required for chiral compounds); R_f values (if pertinent); electronic-spectral data (UV, IR, if recorded); NMR data (if not presented in a table); MS. Note the use of semicolons to separate the successive items, and the use of ACS-approved abbreviations (see *ACS Style Guide*). Punctuate as in the following example:

...gave needles: mp 8385 C; $[\alpha]_D^{25}$ 110 (c 1.4, CHCl₃); IR (KBr); ν 1730 and 1260 (ester), 860 and 840 (Me 3 Si), and 710 cm⁻¹ (Ph); ¹H NMR (CDCl₃, 600 MHz): ?...

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

...allyl 2-acetamido-2-deoxy- β -D-glucopyranoside (1?): 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 ¹³C 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.

Elemental analysis data. Elemental analysis results follow the last spectral data, in the same paragraph. Use the following format: "Anal. Calcd for C₁₃H₁₇BrO₈S: C, 37.78; H, 4.15; Br, 19.34; S, 7.76. Found: C, 37.86; H, 4.13; Br, 19.45; S, 7.84". Note the arrangement of element symbols in the molecular formula: C, H, then the remaining symbols (including metals in salts and complexes) in alphabetical order (standard Hill system).

Elemental analysis data

X-ray crystallographic data. Before submission of the paper, the X-ray data must be filed with and accepted by the Cambridge Crystallographic Data Centre in the usual CIF (Crystallographic Information File) file format. Under a section, "Supplementary Data," that is placed just after the Experimental section, a statement is made as follows:

"Complete crystallographic data for the structural analysis have been deposited with the Cambridge Crystallographic Data Centre, CCDC no. 000000. Copies of this information may be obtained free of charge from the Director, Cambridge Crystallographic Data Centre, 12 Union Road, Cambridge, CB2 1EZ, UK. (fax: +44-1223-336033, e-mail: deposit@ccdc.cam.ac.uk or via: www.ccdc.cam.ac.uk)."

A subheading in the Experimental section is devoted to the description of the X-ray experiment, the equipment, and other information required for repetition of the experiment. Preferably in a table (alternatively in a paragraph of text) crystal data, particulars of the diffraction analysis, and refinement data (specify the function minimized in the least-squares refinement and the weighting factor used), are presented. A table of atomic coordinates and their related anisotropic thermal parameters, tabulations of torsion angles and hydrogen-bond parameters if appropriate, and a structural drawing showing the nonhydrogen atoms as thermal ellipsoids, prepared with ORTEP or an equivalent program should be provided. Only bond angles and bond lengths that are remarkable or necessary for the Discussion section should be provided in a table. A statement giving the ranges of values observed will suffice, with a comment on any unusual values (i.e., outliers). Sufficient torsion angles should be reported to define the molecular conformation. For ring systems, Cremer-Pople puckering parameters (Cremer, D.; Pople, J. A. J. Am. Chem. Soc. 1975, 97, 1354-1358) or their equivalent should be reported. If hydrogen atoms are included in the final refinement, their coordinates should be included in an appropriate table. If there is any discussion of hydrogen bonding, a statement describing precisely how the hydrogen positions were obtained is necessary, and isotropic temperature factors should be included with the H-atom coordinates. Complete tables of bond lengths, valence angles and torsion angles should be provided in the Supplementary Data section of the paper as submitted to the CCDC. Tables of observed and calculated structure factors are not needed as supplementary data. Care must be taken to have the crystallographer correctly number the atoms in the molecular structure according to IUPAC rules of nomenclature. This numbering should appear for atoms listed in the tables and in the ORTEP or other structural figure(s). It is recommended that the system C-1, C-2, O-1, etc. be used.

For cases where X-ray crystallography is used to support the structural identification of a synthetic or natural product in a paper devoted largely to synthetic or isolation chemistry, the authors may wish to report only the ORTEP or similar depiction of the molecule(s). At a minimum, a description of the experimental methods and a tabulation of crystal data should be provided as Supplementary Data to appear with the electronic version of the paper (in addition to filing the data with CCDC, above.)

Papers on X-ray crystallography may appear either as Notes or Full Papers, the former most often used to essentially report the structure of a single or limited number of carbohydrate compounds.

Artwork

Electronic artwork

General points

- Make sure you use uniform lettering and sizing of your original artwork.
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Formats

If your electronic artwork is created in a Microsoft Office application (Word, PowerPoint, Excel) then please supply 'as is' in the native document format.

Regardless of the application used other than Microsoft Office, when your electronic artwork is finalized, please 'Save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):

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Please do not:

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These should be so constructed as to be intelligible without reference to the text. Every table should have a heading, as should every column in a table. Every figure should have a caption (which should be provided on a separate page from the figure). Where the figure is a graph, all axes should be labelled and provided with a scale if appropriate. All graphics must be labelled with the figure or scheme number and the corresponding author's name with a clear file name if using online submission.

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Note 1: ChemDraw/IsisDraw files need to be embedded in the manuscript text and uploaded as separate ChemDraw/IsisDraw files as part of your submission. All other figures, graphics and photos may be embedded in the manuscript text file. Please upload separate figure files; preferred formats are EPS, TIFF, JPEG.

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For example:

1. Borén, H. B.; Garegg, P. J.; Wallin, N.H. *Acta Chem. Scand.*, **1972**, 26, 1082-1086. [**Inclusive pages are required**].
2. Ledrut, H. U.S. Patent 2 551 982, 1951; *Chem. Abstr.*, **1952**, 51, 7128i. [If possible include a reference to *Chemical Abstracts*, or to the *World Patent Index* (Derwent Publishers).]
3. Wolfrom, M.L.; Szarek, W.A. Halogen Derivatives. In *The Carbohydrates, Chemistry and Biochemistry*, 2nd ed; Pigman, W., Horton, D., Eds; Academic Press: New York, 1972; Vol. 1A, pp 239-251.

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[dataset] [5] M. Oguro, S. Imahiro, S. Saito, T. Nakashizuka, Mortality data for Japanese oak wilt disease and surrounding forest compositions, Mendeley Data, v1, 2015. <http://dx.doi.org/10.17632/xwj98nb39r.1>.

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