

## Contents

### iii Graphical Abstracts

#### Regular papers

- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>C. Lièvre, C. Fréchou et G. Demailly (Amiens, France)</b></p> <p><b>N. Mignet (Hayward, CA, USA), C. Chaix (Lyon, France), B. Rayner and J.-L. Imbach (Montpellier, France)</b></p> <p><b>S. Bay (Paris, France), O. Berthier-Vergnes (Lyon, France), V. Biberovic and D. Cantacuzène (Paris, France)</b></p> <p><b>C. Liang, T. Ma, J.S. Cooperwood, J. Du and C.K. Chu (Athens, GA, USA)</b></p> <p><b>L. Lay, R. Windmüller, S. Reinhardt and R.R. Schmidt (Konstanz, Germany)</b></p> <p><b>C. Malet and O. Hindsgaul (Edmonton, Canada)</b></p> <p><b>O. Ahrazem, A. Prieto, J.A. Leal, B. Gómez-Miranda, J. Domenech, J. Jiménez-Barbero and M. Bernabé (Madrid, Spain)</b></p> <p><b>E.R. Arndt and E.S. Stevens (Binghamton, NY, USA)</b></p> <p><b>I.M. Sims (Parkville, Australia), D.J. Craik (St. Lucia, Australia) and A. Bacic (Parkville, Australia)</b></p> <p><b>A.I. Usov, M.I. Bilan and A.S. Shashkov (Moscow, Russia)</b></p> <p><b>J. Lee and R.I. Hollingsworth (East Lansing, MI, USA)</b></p> | <p>1 Réaction d'aldoses partiellement protégés avec des ylures d'arsenic stabilisés: synthèse de dérivés insaturés <i>E</i> acycliques et de dérivés <i>C</i>-glycosyle</p> <p>17 Synthesis and evaluation of glucuronic acid derivatives as alkylating agents for the reversible masking of internucleoside groups of antisense oligonucleotides</p> <p>25 Unusual lactam formation occurring in the synthesis of a biotinylated T-antigen–serine derivative</p> <p>33 Synthesis of L-ribofuranosyl <i>C</i>-nucleosides</p> <p>39 A simple access to lactose-derived building blocks required in glycoconjugate synthesis</p> <p>51 Generation of molecular diversity on <i>N</i>-acetylglucosamine via <i>O</i>-cyanomethyl ethers</p> <p>67 Structural elucidation of acidic fungal polysaccharides isolated from the cell-wall of genera <i>Cylindrocladium</i> and <i>Calonectria</i></p> <p>73 Anhydro sugar and linkage contributions to circular dichroism of agarose and carrageenan, with conformational implications</p> <p>79 Structural characterisation of galactoglucomannan secreted by suspension-cultured cells of <i>Nicotiana glauca</i></p> <p>93 Structure of a sulfated xylogalactan from the calcareous red alga <i>Corallina pilulifera</i> P. et R. (Rhodophyta, Corallinales)</p> <p>103 Confirmation and complete <sup>1</sup>H and <sup>13</sup>C NMR assignment of the structure of peptidoglycan from <i>Sarcina ventriculi</i>, a highly adaptable Gram-positive bacterium</p> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### Notes

- |                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>T.-W. Cai, J.-M. Min and L.-H. Zhang (Beijing, China)</b></p> <p><b>J. Kovensky and A. Fernández Cirelli (Buenos Aires, Argentina)</b></p> <p><b>T. Michaud, J. Chanet-Ray, S. Chou and J. Gelas (Aubière, France)</b></p> | <p>113 Synthesis of lactosyl phosphate diester derivatives of nucleosides</p> <p>119 Chemical modification of glycosaminoglycans. Selective 2-sulfation of D-glucuronic acid units in heparan sulfate</p> <p>123 Synthesis of new enantiomerically pure polyhydroxylated azetidines from monosaccharides</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### iii Graphical Abstracts

#### Rapid Communications

- |                                                                                                                    |                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| <p><b>H. Ishida, H. Hosokawa (Gifu, Japan), H. Kondo (Osaka, Japan), M. Kiso and A. Hasegawa (Gifu, Japan)</b></p> | <p>131 Synthesis of the 3'-<i>C</i>-carboxymethyl Lewis X derivative: a novel selectin blocker</p> |
|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|

## Regular papers

- A.M. Peres and E.A. Macedo (Porto, Portugal) 135 Phase equilibria of D-glucose and sucrose in mixed solvent mixtures: Comparison of UNIQUAC <sup>1</sup>-based models
- B.M. Praest, H. Greiling and R. Kock (Aachen, Germany) 153 Effects of oxygen-derived free radicals on the molecular weight and the polydispersity of hyaluronan solutions
- J. Besson, C. Fayet and J. Gelas (Aubière, France) 159 The introduction of an hydrophobic chain on  $\alpha,\alpha$ -trehalose via the synthesis of acetals. The detergent properties of these derivatives
- V. Pozsgay, E.P. Dubois (Bethesda, MD, USA), H. Lotter (München, Germany) and A. Neszmélyi (Budapest, Hungary) 165 Synthesis and X-ray crystallographic study of cyclabis-(1  $\rightarrow$  2)- $\alpha$ -D-glucopyranosyl peracetate
- J.H. Vleeming, B.F.M. Kuster and G.B. Marin (Eindhoven, The Netherlands) 175 Oxidation of methyl and *n*-octyl  $\alpha$ -D-glucopyranoside over graphite-supported platinum catalysts: effect of the alkyl substituent on activity and selectivity
- C. Choquet-Farnier, I. Stasik and D. Beaupère (Amiens, France) 185 A two step synthesis of 3-deoxy-D- or L-glycono-1,4-lactones and 2-*O*-alkyl-3-deoxy-D-glycono-1,4-lactones from D- or L-glyconolactones
- L. Zhang, Q. Ding, P. Zhang (Wuhan, China), R. Zhu and Y. Zhou (Beijing, China) 193 Molecular weight and aggregation behaviour in solution of  $\beta$ -D-glucan from *Poria cocos* sclerotium
- R.H. Tromp, R. Parker and S.G. Ring (Norwich, UK) 199 Water diffusion in glasses of carbohydrates
- S.M. Pitson, A.G.J. Voragen, J.-P. Vincken and G. Beldman (Wageningen, The Netherlands) 207 Action patterns and mapping of the substrate-binding regions of endo-(1  $\rightarrow$  5)- $\alpha$ -L-arabinanases from *Aspergillus niger* and *Aspergillus aculeatus*
- T. Suganuma, Y. Maeda, K. Kitahara and T. Nagahama (Kagoshima, Japan) 219 Study of the action of human salivary alpha-amylase on 2-chloro-4-nitrophenyl  $\alpha$ -maltotrioside in the presence of potassium thiocyanate

## Notes

- Y. Bahaddi, F. Lelièvre, P. Gareil (Paris, France), J. Maignan (Aulnay, France) and H. Galons (Paris, France) 229 Preparation and complexation ability of zwitterionic derivatives of cyclodextrins
- M.S. Buckeridge (São Paulo, Brazil), H.J. Crombie (Stirling, UK), C.J.M. Mendes (São Paulo, Brazil), J.S.G. Reid (Stirling, UK), M.J. Gidley (Bedford, UK) and C.C.J. Vieira (São Paulo, Brazil) 233 A new family of oligosaccharides from the xyloglucan of *Hymenaea courbaril* L. (Leguminosae) cotyledons
- G. Hodosi and P. Kováč (Bethesda, MD, USA) 239 Manipulation of free carbohydrates via stannylene acetals. Preparation of  $\beta$ -per-*O*-acyl derivatives of D-mannose, L-rhamnose, 6-*O*-trityl-D-talose, and D-lyxose
- L. Galbraith and S.G. Wilkinson (Hull, UK) 245 Structural studies of the O-specific side-chain of lipopolysaccharide from *Burkholderia gladioli* pv. *gladioli* strain NCPPB 1891

## iii Graphical Abstracts

## Rapid Communication

- A.N. Round, A.J. MacDougall, S.G. Ring and V.J. Morris (Norwich, UK) 251 Unexpected branching in pectin observed by atomic force microscopy

## Regular papers

- K. Piyachomkwan, K.P. Gable and M.H. Penner (Corvallis, OR, USA) 255 *p*-Aminophenyl 1-thio- $\beta$ -D-cellobioside: Synthesis and application in affinity chromatography of exo-type cellulases
- X.-X. Zhu, M.-S. Cai and R.-L. Zhou (Beijing, PR China) 261 Studies on the synthesis of two tetrasaccharides and the reactivity difference between them

|                                                                                                                                                                                                                                            |     |                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A. El Nemr and T. Tsuchiya (Kawasaki, Japan)                                                                                                                                                                                               | 267 | $\alpha$ - And $\beta$ -hydrogen eliminations in the reactions of some 3- <i>O</i> -triflylglycosides with <sup>t</sup> BuOK and pyridine                                                                                                                                                                      |
| P.-P. Lu, O. Hindsgaul, H. Li and M.M. Palcic (Alberta, Canada)                                                                                                                                                                            | 283 | Synthesis and evaluation of eight aminodeoxy trisaccharide inhibitors for <i>N</i> -acetylglucosaminyltransferase-V                                                                                                                                                                                            |
| F.W. Lichtenthaler and S. Mondel (Darmstadt, Germany)                                                                                                                                                                                      | 293 | <i>manno</i> - and <i>altro</i> -Sucrose, and some amino-analogues                                                                                                                                                                                                                                             |
| K.N. Price, A. Tuinman, D.C. Baker (Knoxville, TN, USA), C. Chisena and R.L. Cysyk (Bethesda, MD, USA)                                                                                                                                     | 303 | Isolation and characterization by electrospray-ionization mass spectrometry and high-performance anion-exchange chromatography of oligosaccharides derived from hyaluronic acid by hyaluronate lyase digestion: Observation of some heretofore unobserved oligosaccharides that contain an odd number of units |
| M. Batley, J.W. Redmond, N.H. Packer (Macquarie, Australia), D. Liu and P. Reeves (Sydney, Australia)                                                                                                                                      | 313 | The relationship between the structures of the O polysaccharides from <i>Escherichia coli</i> O17 and O16                                                                                                                                                                                                      |
| H. Parolis, L.A.S. Parolis and G. Olivieri (Grahamstown, South Africa)                                                                                                                                                                     | 319 | Structural studies on the <i>Shigella</i> -like <i>Escherichia coli</i> O121 O-specific polysaccharide                                                                                                                                                                                                         |
| K.L.B. Chang, G. Tsai, J. Lee and W.-R. Fu (Keelung, Taiwan, ROC)                                                                                                                                                                          | 327 | Heterogeneous <i>N</i> -deacetylation of chitin in alkaline solution                                                                                                                                                                                                                                           |
| A.S. Shashkov, S.N. Senchenkova (Moscow, Russian Federation), E.L. Nazarenko, V.A. Zubkov, N.M. Gorshkova (Vladivostok, Russian Federation), Y.A. Knirel (Moscow, Russian Federation) and R.P. Gorshkova (Vladivostok, Russian Federation) | 333 | Structure of a phosphorylated polysaccharide from <i>Shewanella putrefaciens</i> strain S29                                                                                                                                                                                                                    |
| P. Finch and J.H. Yoon (Surrey, UK)                                                                                                                                                                                                        | 339 | The effects of organic solvents on the synthesis of galactose disaccharides using $\beta$ -galactosidases                                                                                                                                                                                                      |

## Notes

|                                                                                                        |     |                                                                                                                             |
|--------------------------------------------------------------------------------------------------------|-----|-----------------------------------------------------------------------------------------------------------------------------|
| K.D. Goggin, J.F. Lambert and S.W. Walinsky (Groton, CT, USA)                                          | 347 | Thermal glycosylations: Reactions of $\beta$ -cellobiosyl fluoride heptaacetate with tigogenin and its trimethylsilyl ether |
| K. Tokuyasu, H. Ono, M. Ohnishi-Kameyama, K. Hayashi and Y. Mori (Ibaraki, Japan)                      | 353 | Deacetylation of chitin oligosaccharides of dp 2–4 by chitin deacetylase from <i>Colletotrichum lindemuthianum</i>          |
| C. Crombez-Robert, M. Benazza, C. Fréchéou and G. Demailly (Amiens, France)                            | 359 | Efficient synthesis of $\alpha,\omega$ -dibromodideoxyalditols as precursors for $\alpha,\omega$ -dithioalkylalditols       |
| J.L. Jiménez Blanco, J.M. García Fernández (Sevilla, Spain), A. Gadelle and J. Defaye (Meylan, France) | 367 | A mild one-step selective conversion of primary hydroxyl groups into azides in mono- and oligo-saccharides                  |
| Z.-W. Guo, Y. Nakahara, Y. Nakahara (Saitama, Japan) and T. Ogawa (Saitama, Tokyo, Japan)              | 373 | Solid-phase synthesis of a glycosylated peptide fragment of the IL-8 receptor containing two vicinal oligosaccharide chains |

## iii Graphical Abstracts

## Regular papers

|                                                                                                                                                                              |     |                                                                                                                                                      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|------------------------------------------------------------------------------------------------------------------------------------------------------|
| L. Catoire, V. Michon, L. Monville, A. Hocquet, L. Jullien, J. Canceill, J.-M. Lehn (Paris, France), M. Piotto (Wissembourg, France) and C. Hervé du Penhoat (Paris, France) | 379 | Dynamic behavior of a perfunctionalized $\beta$ -cyclodextrin as probed by NMR and molecular modeling                                                |
| L. Rochepeau-Jobron and J.-C. Jacquinet (Orléans, France)                                                                                                                    | 395 | Diastereoselective hydroboration of substituted <i>exo</i> -glucals revisited. A convenient route for the preparation of L-iduronic acid derivatives |
| E. Farkas, L. Jánosy, J. Harangi, L. Kandra and A. Lipták (Debrecen, Hungary)                                                                                                | 407 | Synthesis of chromogenic substrates of $\alpha$ -amylases on a cyclodextrin basis                                                                    |

- A. Fernandez Cirelli (Buenos Aires, Argentina), H. Mohn (Münster, Germany) and J. Thiem (Hamburg, Germany) 417 Synthesis of thromboxane  $A_2$  models from glucose
- S.A. Galema, J.B.F.N. Engberts and H.A. Van Doren (Groningen, The Netherlands) 423 Synthesis, purification and liquid crystalline behaviour of several alkyl 1-thio-D-glycopyranosides
- A.M. Gil-Serrano, G. Franco-Rodríguez, P. Tejero-Mateo (Sevilla, Spain), J. Thomas-Oates (Utrecht, The Netherlands), H.P. Spaink (Leiden, The Netherlands), J.E. Ruiz-Sainz, M. Megías and Y. Lamrabet (Sevilla, Spain) 435 Structural determination of the lipo-chitin oligosaccharide nodulation signals produced by *Rhizobium fredii* HH103

## Notes

- X. Ding, W. Wang and F. Kong (Beijing, People's Republic of China) 445 Detritylation of mono- and di-saccharide derivatives using ferric chloride hydrate
- L.N. Atopkina, N.I. Uvarova and G.B. Elyakov (Vladivostok, Russia) 449 Simplified preparation of the ginsenoside-Rh<sub>2</sub> minor saponin from ginseng
- M.T. Dueñas-Chasco (San Sebastian, Spain), M.A. Rodríguez-Carvajal, P.T. Mateo, G. Franco-Rodríguez, J.L. Espartero (Seville, Spain), A. Irastorza-Iribas (San Sebastian, Spain) and A.M. Gil-Serrano (Seville, Spain) 453 Structural analysis of the exopolysaccharide produced by *Pediococcus damnosus* 2.6
- A. Ng (Norwich, UK), R.N. Greenshields (Swansea, UK) and K.W. Waldron (Norwich, UK) 459 Oxidative cross-linking of corn bran hemicellulose: formation of ferulic acid dehydrodimers
- 463 Book review
- I Author index
- III Subject index
- X Contents of volume 303