

References

Description

- Sulak, O. ; Cioci, G. ; Lameignere, E. ; Delia, M. ; Wimmerova, M. ; Imberty, A. 2011, PDB : 2XR4 C-terminal domain of BC2L-C Lectin from Burkholderia cenocepacia. DOI : 10.2210/pdb2XR4/pdb.
- Agence Nationale de Sécurité sanitaire du Médicament et des produits de santé. Message d'Alerte Rapide Sanitaire MARS N°2019_11. France : ANSM ; 2019. (<https://ansm.sante.fr/uploads/2021/01/15/20191108-mars-contamination-anios-7130-144.pdf>, accessed March 2021).
- Adam, E. C. ; Mitchell, B. S. ; Schumacher, D. U. ; Grant, G. ; Schumacher, U. Pseudomonas aeruginosa II lectin stops human ciliary beating : therapeutic implications of fucose. Am J Respir Crit Care Med 1997, 155 (6), 2102-4.
- ANSM, F. Agence Nationale de Sécurité sanitaire du Médicament et des produits de santé, Les désinfectants Surfa-safe premium et Opaster Anios des Laboratoires Anios ne doivent plus être utilisés. Communiqué. <https://ansm.sante.fr/actualites/les-desinfectants-surfasafe-premium-et-opaster-anios-des-laboratoires-anios-ne-doivent-plus-etre-utilises-communique> (accessed March 2021).
- Appelgren, P. ; Hellstrom, I. ; Weitzberg, E. ; Soderlund, V. ; Bindsvlev, L. et al. Risk factors for nosocomial intensive care infection : a long-term prospective analysis. Acta Anaesthesiol Scand 2001, 45 (6), 710-9.
- Aronson, M. ; Medalia, O. ; Schori, L. ; Mirelman, D. ; Sharon, N. et al. Prevention of colonization of the urinary tract of mice with Escherichia coli by blocking of bacterial adherence with methyl alpha-D-mannopyranoside. J Infect Dis 1979, 139 (3), 329-32.
- Ashree, J. ; Wang, Q. ; Chao, Y. Glyco-functionalised quantum dots and their progress in cancer diagnosis and treatment. Frontiers of Chemical Science and Engineering 2020, 14 (3), 365-377.
- Bajolet-Laudinat, O. ; Girod-de Bentzmann, S. ; Tournier, J. M. ; Madoulet, C. ; Plotkowski, M. C. et al. Cytotoxicity of Pseudomonas aeruginosa internal lectin PA-I to respiratory epithelial cells in primary culture. Infect Immun 1994, 62 (10), 4481-7.
- Berman, H. M. ; Westbrook, J. ; Feng, Z. ; Gilliland, G. ; Bhat, T. N. et al. The Protein Data Bank. Nucleic Acids Res 2000, 28 (1), 235-42.
- Bernardi, A. ; Jimenez-Barbero, J. ; Casnati, A. ; De Castro, C. ; Darbre, T. et al. Multivalent glycoconjugates as anti-pathogenic agents. Chem Soc Rev 2013, 42 (11), 4709-27.
- Beshr, G. ; Sommer, R. ; Hauck, D. ; Siebert, D. C. B. ; Hofmann, A. et al. Development of a competitive binding assay for the Burkholderia cenocepacia lectin BC2L-A and structure activity relationship of natural and synthetic inhibitors. MedChemComm 2016, 7 (3), 519-530.
- Bonnardel, F. ; Mariethoz, J. ; Salentin, S. ; Robin, X. ; Schroeder, M. et al. UniLectin3D, a database of carbohydrate binding proteins with curated information on 3D structures and interacting ligands. Nucleic Acids Research 2019, 47 (D1), D1236-D1244.
- Boukerb, A. M. ; Rousset, A. ; Galanos, N. ; Mear, J. B. ; Thepaut, M. et al. Antiadhesive properties of glycoclusters against Pseudomonas aeruginosa lung infection. J Med Chem 2014, 57 (24), 10275-89.
- Bragonzi, A. ; Farulla, I. ; Paroni, M. ; Twomey, K. B. ; Pirone, L. et al. Modelling co-infection of the cystic fibrosis lung by Pseudomonas aeruginosa and Burkholderia cenocepacia reveals

influences on biofilm formation and host response. *PLoS One* 2012, 7 (12), e52330.

- Breiman, A. ; Lopez Robles, M. D. ; de Carne Trecesson, S. ; Echasserieau, K. ; Bernardeau, K. et al. Carcinoma-associated fucosylated antigens are markers of the epithelial state and can contribute to cell adhesion through CLEC17A (Prolectin). *Oncotarget* 2016, 7 (12), 14064-82.
- Bucior, I. ; Abbott, J. ; Song, Y. ; Matthay, M. A. ; Engel, J. N. Sugar administration is an effective adjunctive therapy in the treatment of *Pseudomonas aeruginosa* pneumonia. *Am J Physiol Lung Cell Mol Physiol* 2013, 305 (5), L352-63.
- Budhadev, D. ; Poole, E. ; Nehlmeier, I. ; Liu, Y. ; Hooper, J. et al. Glycan-Gold Nanoparticles as Multifunctional Probes for Multivalent Lectin-Carbohydrate Binding : Implications for Blocking Virus Infection and Nanoparticle Assembly. *J Am Chem Soc* 2020, 142 (42), 18022-18034.
- Bushak, L. A Brief History of Antibiotic Resistance : How a Medical Miracle Turned into the Biggest Public Health Danger of Our Time. *Medical Daily* ; 2016. (<https://www.medicaldaily.com/antibiotic-resistance-history-373773>, accessed March 2021).
- Campana, S. ; Taccetti, G. ; Ravenni, N. ; Favari, F. ; Cariani, L. et al. Transmission of *Burkholderia cepacia* complex : evidence for new epidemic clones infecting cystic fibrosis patients in Italy. *J Clin Microbiol* 2005, 43 (10), 5136-42.
- Campbell, L. K. ; Baker, D. E. ; Campbell, R. K. Miglitol : assessment of its role in the treatment of patients with diabetes mellitus. *Ann Pharmacother* 2000, 34 (11), 1291-301.
- Carlos, T. M. ; Harlan, J. M. Leukocyte-endothelial adhesion molecules. *Blood* 1994, 84 (7), 2068-101.
- Carlotti, A. *Burkholderia cepacia* strikes again. A3P Association pour les Produits Propres et Parentaux ; 2020. (<https://www.a3p.org/en/burkholderia-cepacia/>, accessed March 2021).
- Cassini, A. ; Hogberg, L. D. ; Plachouras, D. ; Quattrocchi, A. ; Hoxha, A. et al. Attributable deaths and disability-adjusted life-years caused by infections with antibiotic-resistant bacteria in the EU and the European Economic Area in 2015 : a population-level modelling analysis. *Lancet Infect Dis* 2019, 19 (1), 56-66.
- Cecioni, S. ; Imbert, A. ; Vidal, S. Glycomimetics versus multivalent glycoconjugates for the design of high affinity lectin ligands. *Chem Rev* 2015, 115 (1), 525-61.
- Chemani, C. ; Imbert, A. ; de Bentzmann, S. ; Pierre, M. ; Wimmerova, M. et al. Role of LecA and LecB lectins in *Pseudomonas aeruginosa*-induced lung injury and effect of carbohydrate ligands. *Infect Immun* 2009, 77 (5), 2065-75.
- Chen, X. ; Zheng, Y. ; Shen, Y. Voglibose (Basen, AO-128), one of the most important alpha-glucosidase inhibitors. *Curr Med Chem* 2006, 13 (1), 109-16.
- Chiodo, F. ; Bruijns, S. C. M. ; Rodriguez, E. ; Li, R. J. E. ; Molinaro, A. et al. Novel ACE2-Independent Carbohydrate-Binding of SARS-CoV-2 Spike Protein to Host Lectins and Lung Microbiota. *bioRxiv* 2020, 2020.05.13.092478.
- Ciofu, O. ; Hansen, C. R. ; Hoiby, N. Respiratory bacterial infections in cystic fibrosis. *Curr Opin Pulm Med* 2013, 19 (3), 251-8.
- Cory, S. ; Adams, J. M. The Bcl2 family : regulators of the cellular life-or-death switch. *Nat Rev Cancer* 2002, 2 (9), 647-56.
- Cozens, D. ; Read, R. C. Anti-adhesion methods as novel therapeutics for bacterial infections. *Expert Rev Anti Infect Ther* 2012, 10 (12), 1457-68.
- Csavas, M. ; Malinowska, L. ; Perret, F. ; Gyurko, M. ; Illyes, Z. T. et al. Tri- and tetravalent mannoclusters cross-link and aggregate BC2L-A lectin from *Burkholderia cenocepacia*. *Carbohydr Res* 2017, 437, 1-8.
- Diggle, S. P. ; Stacey, R. E. ; Dodd, C. ; Camara, M. ; Williams, P. et al. The galactophilic lectin, LecA, contributes to biofilm development in *Pseudomonas aeruginosa*. *Environ Microbiol* 2006, 8

(6), 1095-104.

- Diggle, S. P. ; Whiteley, M. Microbe Profile : *Pseudomonas aeruginosa* : opportunistic pathogen and lab rat. *Microbiology (Reading)* 2020, 166 (1), 30-33.
- Drevinek, P. ; Mahenthiralingam, E. *Burkholderia cenocepacia* in cystic fibrosis : epidemiology and molecular mechanisms of virulence. *Clin Microbiol Infect* 2010, 16 (7), 821-30.
- Duthoit, B. L'entreprise nordiste Anios fait un rappel mondial de désinfectants et suspend sa production. *La Voix du Nord* ; 2019. (<https://www.lavoixdunord.fr/662699/article/2019-11-07/l-entreprise-nordiste-anios-fait-un-rappel-mondial-de-desinfectants-et-suspend>, accessed March 2021).
- Ernst, B. ; Magnani, J. L. From carbohydrate leads to glycomimetic drugs. *Nat Rev Drug Discov* 2009, 8 (8), 661-77.
- European Commission. A European One Health Action Plan against Antimicrobial Resistance (AMR). Brussels : European Commission ; 2017. (https://ec.europa.eu/health/sites/health/files/antimicrobial_resistance/docs/amr_2017_action-plan.pdf, accessed March 2021).
- Festuccia, C. ; Mancini, A. ; Gravina, G. L. ; Colapietro, A. ; Vetuschi, A. et al. Dual CXCR4 and E-Selectin Inhibitor, GMI-1359, Shows Anti-Bone Metastatic Effects and Synergizes with Docetaxel in Prostate Cancer Cell Intraosseous Growth. *Cells* 2019, 9 (1).
- Gabius, H.-J. The sugar code : Why glycans are so important. *Biosystems* 2018, 164, 102-111.
- Garcia-Clemente, M. ; de la Rosa, D. ; Maiz, L. ; Giron, R. ; Blanco, M. et al. Impact of *Pseudomonas aeruginosa* Infection on Patients with Chronic Inflammatory Airway Diseases. *J Clin Med* 2020, 9 (12).
- Geissner, A. ; Reinhardt, A. ; Rademacher, C. ; Johannssen, T. ; Monteiro, J. et al. Microbe-focused glycan array screening platform. *Proc Natl Acad Sci U S A* 2019, 116 (6), 1958-1967.
- Gilboa-Garber, N. *Pseudomonas aeruginosa* lectins. *Methods Enzymol* 1982, 83, 378-85.
- Gustke, H. ; Kleene, R. ; Loers, G. ; Nehmann, N. ; Jaehne, M. et al. Inhibition of the bacterial lectins of *Pseudomonas aeruginosa* with monosaccharides and peptides. *Eur J Clin Microbiol Infect Dis* 2012, 31 (2), 207-15.
- Hall-Stoodley, L. ; Costerton, J. W. ; Stoodley, P. Bacterial biofilms : from the natural environment to infectious diseases. *Nat Rev Microbiol* 2004, 2 (2), 95-108.
- Hauber, H. P. ; Schulz, M. ; Pforte, A. ; Mack, D. ; Zabel, P. et al. Inhalation with fucose and galactose for treatment of *Pseudomonas aeruginosa* in cystic fibrosis patients. *Int J Med Sci* 2008, 5 (6), 371-6.
- Heggelund, J. E. ; Varrot, A. ; Imberty, A. ; Krenzel, U. Histo-blood group antigens as mediators of infections. *Current Opinion in Structural Biology* 2017, 44, 190-200.
- Hevey, R. Strategies for the Development of Glycomimetic Drug Candidates. *Pharmaceuticals (Basel)* 2019, 12 (2).
- Holden, M. T. ; Seth-Smith, H. M. ; Crossman, L. C. ; Sebahia, M. ; Bentley, S. D. et al. The genome of *Burkholderia cenocepacia* J2315, an epidemic pathogen of cystic fibrosis patients. *J Bacteriol* 2009, 191 (1), 261-77.
- Houser, J. ; Kosourova, J. ; Kubickova, M. ; Wimmerova, M. Development of 48-condition buffer screen for protein stability assessment. *Eur Biophys J* 2021.
- IBCWG International *Burkholderia cenocepacia* Working Group. ibcwg.org (accessed March 2021).
- Imberty, A. ; Mitchell, E. P. ; Wimmerova, M. Structural basis of high-affinity glycan recognition by bacterial and fungal lectins. *Curr Opin Struct Biol* 2005, 15 (5), 525-34.
- Imberty, A. ; Varrot, A. Microbial recognition of human cell surface glycoconjugates. *Curr Opin Struct Biol* 2008, 18 (5), 567-76.

- Inhulsen, S. ; Aguilar, C. ; Schmid, N. ; Suppiger, A. ; Riedel, K. et al. Identification of functions linking quorum sensing with biofilm formation in *Burkholderia cenocepacia* H111. *Microbiologyopen* 2012, 1 (2), 225-42.
- Jones, A. M. ; Dodd, M. E. ; Govan, J. R. ; Barcus, V. ; Doherty, C. J. et al. *Burkholderia cenocepacia* and *Burkholderia multivorans* : influence on survival in cystic fibrosis. *Thorax* 2004, 59 (11), 948-51.
- Kaltner, H. ; Abad-Rodríguez, J. ; Corfield, A. P. ; Kopitz, J. ; Gabius, H.-J. The sugar code : letters and vocabulary, writers, editors and readers and biosignificance of functional glycan-lectin pairing. *Biochemical Journal* 2019, 476 (18), 2623-2655.
- Kane, R. S. Thermodynamics of multivalent interactions : influence of the linker. *Langmuir* 2010, 26 (11), 8636-40.
- Kasakova, M. ; Malinovska, L. ; Klejch, T. ; Hlavackova, M. ; Dvorakova, H. et al. Selectivity of original C-hexopyranosyl calix[4]arene conjugates towards lectins of different origin. *Carbohydr Res* 2018, 469, 60-72.
- Kiessling, L. L. ; Gestwicki, J. E. ; Strong, L. E. Synthetic multivalent ligands as probes of signal transduction. *Angew Chem Int Ed Engl* 2006, 45 (15), 2348-68.
- Kim, B. S. ; Hong, D. J. ; Bae, J. ; Lee, M. Controlled self-assembly of carbohydrate conjugate rod-coil amphiphiles for supramolecular multivalent ligands. *J Am Chem Soc* 2005, 127 (46), 16333-7.
- Kim, C. U. ; Lew, W. ; Williams, M. A. ; Liu, H. ; Zhang, L. et al. Influenza neuraminidase inhibitors possessing a novel hydrophobic interaction in the enzyme active site : design, synthesis, and structural analysis of carbocyclic sialic acid analogues with potent anti-influenza activity. *J Am Chem Soc* 1997, 119 (4), 681-90.
- Krachler, A. M. ; Orth, K. Targeting the bacteria-host interface : strategies in anti-adhesion therapy. *Virulence* 2013, 4 (4), 284-94.
- Lameignere, E. ; Malinovska, L. ; Slavikova, M. ; Duchaud, E. ; Mitchell, E. P. et al. Structural basis for mannose recognition by a lectin from opportunistic bacteria *Burkholderia cenocepacia*. *Biochem J* 2008, 411 (2), 307-18.
- Lameignere, E. ; Shiao, T. C. ; Roy, R. ; Wimmerova, M. ; Dubreuil, F. et al. Structural basis of the affinity for oligomannosides and analogs displayed by BC2L-A, a *Burkholderia cenocepacia* soluble lectin. *Glycobiology* 2010, 20 (1), 87-98.
- Lee, Y. C. ; Lee, R. T. Carbohydrate-Protein Interactions : Basis of Glycobiology. *Accounts of Chemical Research* 1995, 28 (8), 321-327.
- Letko, M. ; Marzi, A. ; Munster, V. Functional assessment of cell entry and receptor usage for SARS-CoV-2 and other lineage B betacoronaviruses. *Nat Microbiol* 2020, 5 (4), 562-569.
- Loutet, S. A. ; Valvano, M. A. A decade of *Burkholderia cenocepacia* virulence determinant research. *Infect Immun* 2010, 78 (10), 4088-100.
- Lundquist, J. J. ; Toone, E. J. The cluster glycoside effect. *Chem Rev* 2002, 102 (2), 555-78.
- Mahenthiralingam, E. ; Urban, T. A. ; Goldberg, J. B. The multifarious, multireplicon *Burkholderia cenocepacia* complex. *Nat Rev Microbiol* 2005, 3 (2), 144-56.
- Marchetti, R. ; Malinovska, L. ; Lameignere, E. ; Adamova, L. ; de Castro, C. et al. *Burkholderia cenocepacia* lectin A binding to heptoses from the bacterial lipopolysaccharide. *Glycobiology* 2012, 22 (10), 1387-98.
- Martínez-Ávila, O. ; Hijazi, K. ; Marradi, M. ; Clavel, C. ; Campion, C. et al. Gold Manno-Glyconanoparticles : Multivalent Systems to Block HIV-1 gp120 Binding to the Lectin DC-SIGN. *Chemistry - A European Journal* 2009, 15 (38), 9874-9888.

-
- Mawaribuchi, S. ; Haramoto, Y. ; Tateno, H. ; Onuma, Y. ; Aiki, Y. et al. rBC2LCN lectin as a potential probe of early-stage HER2-positive breast carcinoma. *FEBS Open Bio* 2020, 10 (6), 1056-1064.
 - Mawaribuchi, S. ; Onuma, Y. ; Aiki, Y. ; Kuriyama, Y. ; Mutoh, M. et al. The rBC2LCN-positive subpopulation of PC-3 cells exhibits cancer stem-like properties. *Biochem Biophys Res Commun* 2019, 515 (1), 176-182.
 - McGann, P. ; Snesrud, E. ; Maybank, R. ; Corey, B. ; Ong, A. C. et al. Escherichia coli Harboring mcr-1 and blaCTX-M on a Novel IncF Plasmid : First Report of mcr-1 in the United States. *Antimicrob Agents Chemother* 2016, 60 (7), 4420-1.
 - Medve, L. ; Achilli, S. ; Guzman-Caldentey, J. ; Thepaut, M. ; Senaldi, L. et al. Enhancing Potency and Selectivity of a DC-SIGN Glycomimetic Ligand by Fragment-Based Design : Structural Basis. *Chemistry* 2019, 25 (64), 14659-14668.
 - Meiers, J. ; Zahorska, E. ; Rohrig, T. ; Hauck, D. ; Wagner, S. et al. Directing Drugs to Bugs : Antibiotic-Carbohydrate Conjugates Targeting Biofilm-Associated Lectins of Pseudomonas aeruginosa. *J Med Chem* 2020, 63 (20), 11707-11724.
 - Mereiter, S. ; Balmaña, M. ; Campos, D. ; Gomes, J. ; Reis, C. A. Glycosylation in the Era of Cancer-Targeted Therapy : Where Are We Heading ? *Cancer Cell* 2019, 36 (1), 6-16.
 - Merritt, E. A. ; Hol, W. G. J. AB5 toxins. *Current Opinion in Structural Biology* 1995, 5 (2), 165-171.
 - Mil-Homens, D. ; Fialho, A. M. A BCAM0223 mutant of Burkholderia cenocepacia is deficient in hemagglutination, serum resistance, adhesion to epithelial cells and virulence. *PLoS One* 2012, 7 (7), e41747.
 - Mira, N. P. ; Madeira, A. ; Moreira, A. S. ; Coutinho, C. P. ; Sa-Correia, I. Genomic expression analysis reveals strategies of Burkholderia cenocepacia to adapt to cystic fibrosis patients' airways and antimicrobial therapy. *PLoS One* 2011, 6 (12), e28831.
 - Mitchell, E. ; Houles, C. ; Sudakevitz, D. ; Wimmerova, M. ; Gautier, C. et al. Structural basis for oligosaccharide-mediated adhesion of Pseudomonas aeruginosa in the lungs of cystic fibrosis patients. *Nat Struct Biol* 2002, 9 (12), 918-21.
 - Mok, B. Y. ; de Moraes, M. H. ; Zeng, J. ; Bosch, D. E. ; Kotrys, A. V. et al. A bacterial cytidine deaminase toxin enables CRISPR-free mitochondrial base editing. *Nature* 2020, 583 (7817), 631-637.
 - Natoni, A. ; Macauley, M. S. ; Dwyer, M. E. Targeting Selectins and Their Ligands in Cancer. *Front Oncol* 2016, 6, 93.
 - Noble, S. ; Goa, K. L. Gemcitabine. A review of its pharmacology and clinical potential in non-small cell lung cancer and pancreatic cancer. *Drugs* 1997, 54 (3), 447-72.
 - Notova, S. ; Bonnardel, F. ; Lisacek, F. ; Varrot, A. ; Imberty, A. Structure and engineering of tandem repeat lectins. *Current Opinion in Structural Biology* 2020, 62, 39-47.
 - Sullivan, B. P. ; Freedman, S. D. Cystic fibrosis. *Lancet* 2009, 373 (9678), 1891-904.
 - Onuma, Y. ; Tateno, H. ; Hirabayashi, J. ; Ito, Y. ; Asashima, M. rBC2LCN, a new probe for live cell imaging of human pluripotent stem cells. *Biochem Biophys Res Commun* 2013, 431 (3), 524-9.
 - Ordanini, S. ; Varga, N. ; Porkolab, V. ; Thepaut, M. ; Belvisi, L. et al. Designing nanomolar antagonists of DC-SIGN-mediated HIV infection : ligand presentation using molecular rods. *Chemical Communications* 2015, 51 (18), 3816-3819.
 - Ozer, B. ; Tatman-Otkun, M. ; Memis, D. ; Otkun, M. Nosocomial infections and risk factors in intensive care unit of a university hospital in Turkey. *Central European Journal of Medicine* 2010, 5 (2), 203-208.

-
- Parente, F. ; Cucino, C. ; Anderloni, A. ; Grandinetti, G. ; Bianchi Porro, G. Treatment of *Helicobacter pylori* infection using a novel antiadhesion compound (3-*O*-sialyllactose sodium salt). A double blind, placebo-controlled clinical study. *Helicobacter* 2003, 8 (4), 252-6.
 - Passos da Silva, D. ; Matwichuk, M. L. ; Townsend, D. O. ; Reichhardt, C. ; Lamba, D. et al. The *Pseudomonas aeruginosa* lectin LecB binds to the exopolysaccharide Psl and stabilizes the biofilm matrix. *Nat Commun* 2019, 10 (1), 2183.
 - Pieters, R. J. Maximising multivalency effects in protein-carbohydrate interactions. *Org Biomol Chem* 2009, 7 (10), 2013-25.
 - Pifferi, C. ; Goyard, D. ; Gillon, E. ; Imberty, A. ; Renaudet, O. Synthesis of Mannosylated Glycodendrimers and Evaluation against BC2L-A Lectin from *Burkholderia cenocepacia*. *Chempluschem* 2017, 82 (3), 390-398.
 - Pimenta, A. I. ; Bernardes, N. ; Alves, M. M. ; Mil-Homens, D. ; Fialho, A. M. *Burkholderia cenocepacia* transcriptome during the early contacts with giant plasma membrane vesicles derived from live bronchial epithelial cells. *Sci Rep* 2021, 11 (1), 5624.
 - Pinho, S. S. ; Reis, C. A. Glycosylation in cancer : mechanisms and clinical implications. *Nature Reviews Cancer* 2015, 15 (9), 540-555.
 - Poole, J. ; Day, C. J. ; von Itzstein, M. ; Paton, J. C. ; Jennings, M. P. Glycointeractions in bacterial pathogenesis. *Nature Reviews Microbiology* 2018, 16 (7), 440-452.
 - Prost, L. R. ; Grim, J. C. ; Tonelli, M. ; Kiessling, L. L. Noncarbohydrate glycomimetics and glycoprotein surrogates as DC-SIGN antagonists and agonists. *ACS Chem Biol* 2012, 7 (9), 1603-8.
 - RCSB PDB, Research Collaboratory for Structural Bioinformatics - Protein Data Bank. <https://www.rcsb.org/> (accessed March 2021).
 - Regan, K. H. ; Bhatt, J. Eradication therapy for *Burkholderia cepacia* complex in people with cystic fibrosis. *Cochrane Database Syst Rev* 2019, 4, CD009876.
 - Reitsma, S. ; Slaaf, D. W. ; Vink, H. ; van Zandvoort, M. A. ; oude Egbrink, M. G. The endothelial glycocalyx : composition, functions, and visualization. *Pflugers Arch* 2007, 454 (3), 345-59.
 - Ren, W. ; Pengelly, R. ; Farren-Dai, M. ; Shamsi Kazem Abadi, S. ; Oehler, V. et al. Revealing the mechanism for covalent inhibition of glycoside hydrolases by carbasugars at an atomic level. *Nat Commun* 2018, 9 (1), 3243.
 - Reynolds, M. ; Marradi, M. ; Imberty, A. ; Penades, S. ; Perez, S. Influence of ligand presentation density on the molecular recognition of mannose-functionalised glyconanoparticles by bacterial lectin BC2L-A. *Glycoconj J* 2013, 30 (8), 747-57.
 - Ribeiro-Viana, R. ; Sanchez-Navarro, M. ; Luczkowiak, J. ; Koeppe, J. R. ; Delgado, R. et al. Virus-like glycodendrinanoparticles displaying quasi-equivalent nested polyvalency upon glycoprotein platforms potently block viral infection. *Nat Commun* 2012, 3, 1303.
 - Ribeiro, J. P. ; Villringer, S. ; Goyard, D. ; Coche-Guerente, L. ; Häfnerlin, M. et al. Tailor-made Janus lectin with dual avidity assembles glycoconjugate multilayers and crosslinks protocells. *Chemical Science* 2018, 9 (39), 7634-7641.
 - Roberts, P. A. ; Huebinger, R. M. ; Keen, E. ; Krachler, A. M. ; Jabbari, S. Mathematical model predicts anti-adhesion-antibiotic-debridement combination therapies can clear an antibiotic resistant infection. *PLoS Comput Biol* 2019, 15 (7), e1007211.
 - Sabin, C. ; Mitchell, E. P. ; Pokorna, M. ; Gautier, C. ; Utille, J. P. et al. Binding of different monosaccharides by lectin PA-IIL from *Pseudomonas aeruginosa* : thermodynamics data correlated with X-ray structures. *FEBS Lett* 2006, 580 (3), 982-7.
 - Sattin, S. ; Bernardi, A. Glycoconjugates and Glycomimetics as Microbial Anti-Adhesives. *Trends Biotechnol* 2016, 34 (6), 483-495.

- Schaeffer, E. ; Dehuyser, L. ; Sigwalt, D. ; Flacher, V. ; Bernacchi, S. et al. Dynamic micelles of mannoside glycolipids are more efficient than polymers for inhibiting HIV-1 trans-infection. *Bioconjug Chem* 2013, 24 (11), 1813-23.
- Schmid, N. ; Pessi, G. ; Deng, Y. ; Aguilar, C. ; Carlier, A. L. et al. The AHL- and BDSF-dependent quorum sensing systems control specific and overlapping sets of genes in *Burkholderia cenocepacia* H111. *PLoS One* 2012, 7 (11), e49966.
- Scoffone, V. C. ; Chiarelli, L. R. ; Trespidi, G. ; Mentasti, M. ; Riccardi, G. et al. *Burkholderia cenocepacia* Infections in Cystic Fibrosis Patients : Drug Resistance and Therapeutic Approaches. *Front Microbiol* 2017, 8, 1592.
- Seth-Smith, H. M. B. ; Casanova, C. ; Sommerstein, R. ; Meinel, D. M. ; Abdelbary, M. M. H. et al. Phenotypic and Genomic Analyses of *Burkholderia stabilis* Clinical Contamination, Switzerland. *Emerg Infect Dis* 2019, 25 (6), 1084-1092.
- Sharon, N. Carbohydrates as future anti-adhesion drugs for infectious diseases. *Biochim Biophys Acta* 2006, 1760 (4), 527-37.
- Sharon, N. ; Lis, H. History of lectins : from hemagglutinins to biological recognition molecules. *Glycobiology* 2004, 14 (11), 53R-62R.
- Sharon, N. ; Ofek, I. Safe as mother's milk : carbohydrates as future anti-adhesion drugs for bacterial diseases. *Glycoconj J* 2000, 17 (7-9), 659-64.
- Shimomura, O. ; Oda, T. ; Tateno, H. ; Ozawa, Y. ; Kimura, S. et al. A Novel Therapeutic Strategy for Pancreatic Cancer : Targeting Cell Surface Glycan Using rBC2LC-N Lectin-Drug Conjugate (LDC). *Mol Cancer Ther* 2018, 17 (1), 183-195.
- SolÀs, D. ; Bovin, N. V. ; Davis, A. P. ; JimÃ©nez-Barbero, J. ; Romero, A. et al. A guide into glycosciences : How chemistry, biochemistry and biology cooperate to crack the sugar code. *Biochimica et Biophysica Acta (BBA) - General Subjects* 2015, 1850 (1), 186-235.
- Sommer, R. ; Rox, K. ; Wagner, S. ; Hauck, D. ; Henrikus, S. S. et al. Anti-biofilm Agents against *Pseudomonas aeruginosa* : A Structure-Activity Relationship Study of C-Glycosidic LecB Inhibitors. *J Med Chem* 2019, 62 (20), 9201-9216.
- Sommer, R. ; Wagner, S. ; Rox, K. ; Varrot, A. ; Hauck, D. et al. Glycomimetic, Orally Bioavailable LecB Inhibitors Block Biofilm Formation of *Pseudomonas aeruginosa*. *J Am Chem Soc* 2018, 140 (7), 2537-2545.
- Soria-Martinez, L. ; Bauer, S. ; Giesler, M. ; Schelhaas, S. ; Materlik, J. et al. Prophylactic Antiviral Activity of Sulfated Glycomimetic Oligomers and Polymers. *J Am Chem Soc* 2020, 142 (11), 5252-5265.
- Speert, D. P. ; Bond, M. ; Woodman, R. C. ; Curnutte, J. T. Infection with *Pseudomonas cepacia* in chronic granulomatous disease : role of nonoxidative killing by neutrophils in host defense. *J Infect Dis* 1994, 170 (6), 1524-31.
- Sugahara, D. ; Kobayashi, Y. ; Akimoto, Y. ; Kawakami, H. Mouse intestinal niche cells express a distinct alpha1,2-fucosylated glycan recognized by a lectin from *Burkholderia cenocepacia*. *Glycobiology* 2017, 27 (3), 246-253.
- Sulak, O. ; Cioci, G. ; Delia, M. ; Lahmann, M. ; Varrot, A. et al. A TNF-like trimeric lectin domain from *Burkholderia cenocepacia* with specificity for fucosylated human histo-blood group antigens. *Structure* 2010, 18 (1), 59-72.
- Sulak, O. ; Cioci, G. ; Lameignere, E. ; Balloy, V. ; Round, A. et al. *Burkholderia cenocepacia* BC2L-C is a super lectin with dual specificity and proinflammatory activity. *PLoS Pathog* 2011, 7 (9), e1002238.
- Takenaka, Y. ; Fukumori, T. ; Raz, A. Galectin-3 and metastasis. *Glycoconj J* 2002, 19 (7-9), 543-9.

-
- Tamburrini, A. ; Colombo, C. ; Bernardi, A. Design and synthesis of glycomimetics : Recent advances. *Med Res Rev* 2020, 40 (2), 495-531.
 - Tateno, H. ; Hiemori, K. ; Minoshima, F. ; Kiyoi, K. ; Matoba, K. et al. Oriented immobilization of rBC2LCN lectin for highly sensitive detection of human pluripotent stem cells using cell culture supernatants. *J Biosci Bioeng* 2020, 129 (2), 215-222.
 - Tateno, H. ; Matsushima, A. ; Hiemori, K. ; Onuma, Y. ; Ito, Y. et al. Podocalyxin is a glycoprotein ligand of the human pluripotent stem cell-specific probe rBC2LCN. *Stem Cells Transl Med* 2013, 2 (4), 265-73.
 - Tateno, H. ; Onuma, Y. ; Ito, Y. ; Hiemori, K. ; Aiki, Y. et al. A medium hyperglycosylated podocalyxin enables noninvasive and quantitative detection of tumorigenic human pluripotent stem cells. *Sci Rep* 2014, 4, 4069.
 - Tateno, H. ; Onuma, Y. ; Ito, Y. ; Minoshima, F. ; Saito, S. et al. Elimination of tumorigenic human pluripotent stem cells by a recombinant lectin-toxin fusion protein. *Stem Cell Reports* 2015, 4 (5), 811-20.
 - Tateno, H. ; Toyota, M. ; Saito, S. ; Onuma, Y. ; Ito, Y. et al. Glycome diagnosis of human induced pluripotent stem cells using lectin microarray. *J Biol Chem* 2011, 286 (23), 20345-53.
 - Tavares, M. ; Kozak, M. ; Balola, A. ; Sa-Correia, I. *Burkholderia cepacia* Complex Bacteria : a Feared Contamination Risk in Water-Based Pharmaceutical Products. *Clin Microbiol Rev* 2020, 33 (3).
 - Thai Le, S. ; Malinovska, L. ; Vaskova, M. ; Mezo, E. ; Kelemen, V. et al. Investigation of the Binding Affinity of a Broad Array of I-Fucosides with Six Fucose-Specific Lectins of Bacterial and Fungal Origin. *Molecules* 2019, 24 (12).
 - Tielker, D. ; Hacker, S. ; Loris, R. ; Strathmann, M. ; Wingender, J. et al. *Pseudomonas aeruginosa* lectin LecB is located in the outer membrane and is involved in biofilm formation. *Microbiology (Reading)* 2005, 151 (Pt 5), 1313-1323.
 - Tokiwa, T. ; Nakano, S. ; Yamamoto, Y. ; Ishikawa, T. ; Ito, S. et al. Development of an Analysis Toolkit, AnalysisFMO, to Visualize Interaction Energies Generated by Fragment Molecular Orbital Calculations. *J Chem Inf Model* 2019, 59 (1), 25-30.
 - Ukkonen, P. ; Varis, K. ; Jernfors, M. ; Herva, E. ; Jokinen, J. et al. Treatment of acute otitis media with an antiadhesive oligosaccharide : a randomised, double-blind, placebo-controlled trial. *Lancet* 2000, 356 (9239), 1398-402.
 - U.S. Centers for Disease Control and Prevention. Antibiotic Resistance Threats in the United States 2019. Atlanta, GA : U.S. Department of Health and Human Services, CDC ; 2019. (<https://stacks.cdc.gov/view/cdc/82532>, accessed March 2021).
 - van Duin, D. ; Paterson, D. L. Multidrug-Resistant Bacteria in the Community : Trends and Lessons Learned. *Infect Dis Clin North Am* 2016, 30 (2), 377-390.
 - Vandamme, P. ; Holmes, B. ; Coenye, T. ; Goris, J. ; Mahenthiralingam, E. et al. *Burkholderia cenocepacia* sp. nov. a new twist to an old story. *Res Microbiol* 2003, 154 (2), 91-6.
 - Vandamme, P. ; Holmes, B. ; Vancanneyt, M. ; Coenye, T. ; Hoste, B. et al. Occurrence of multiple genomovars of *Burkholderia cepacia* in cystic fibrosis patients and proposal of *Burkholderia multivorans* sp. nov. *Int J Syst Bacteriol* 1997, 47 (4), 1188-200.
 - Varga, N. ; Sutkeviciute, I. ; Ribeiro-Viana, R. ; Berzi, A. ; Ramdasi, R. et al. A multivalent inhibitor of the DC-SIGN dependent uptake of HIV-1 and Dengue virus. *Biomaterials* 2014, 35 (13), 4175-4184.
 - Viela, F. ; Mathelie-Guinlet, M. ; Viljoen, A. ; Dufrene, Y. F. What makes bacterial pathogens so sticky ? *Mol Microbiol* 2020, 113 (4), 683-690.

-
- Wagner, S. ; Hauck, D. ; Hoffmann, M. ; Sommer, R. ; Joachim, I. et al. Covalent Lectin Inhibition and Application in Bacterial Biofilm Imaging. *Angew Chem Int Ed Engl* 2017, 56 (52), 16559-16564.
 - Wdowiak, K. ; Francuz, T. ; Gallego-Colon, E. ; Ruiz-Agamez, N. ; Kubeczko, M. et al. Galectin Targeted Therapy in Oncology : Current Knowledge and Perspectives. *Int J Mol Sci* 2018, 19 (1).
 - Whiteley, M. ; Bangera, M. G. ; Bumgarner, R. E. ; Parsek, M. R. ; Teitzel, G. M. et al. Gene expression in *Pseudomonas aeruginosa* biofilms. *Nature* 2001, 413 (6858), 860-4.
 - World Health Organization. Global Action Plan on Antimicrobial Resistance. Geneva : WHO ; 2015. (<https://www.who.int/antimicrobial-resistance/publications/global-action-plan/en/>, accessed March 2021).
 - World Health Organization. Global report on diabetes. Geneva : WHO ; 2016. (<https://www.who.int/publications/i/item/9789241565257>, accessed March 2021).
 - World Health Organization. Global priority list of antibiotic-resistant bacteria to guide research, discovery, and development of new antibiotics. Geneva : WHO ; 2017. (<https://www.who.int/medicines/publications/global-priority-list-antibiotic-resistant-bacteria/en/>, accessed March 2021).
 - World Health Organization. Global tuberculosis report 2020. Geneva : WHO ; 2020. (<https://www.who.int/publications/i/item/9789240013131>, accessed March 2021).
 - World Health Organization. Leading causes of death and disability : A visual summary of global and regional trends 2000-2019. WHO website ; 2020. (<https://www.who.int/data/stories/leading-causes-of-death-and-disability-2000-2019-a-visual-summary>, accessed March 2021).
 - Winzer, K. ; Falconer, C. ; Garber, N. C. ; Diggle, S. P. ; Camara, M. et al. The *Pseudomonas aeruginosa* lectins PA-IL and PA-IIL are controlled by quorum sensing and by RpoS. *J Bacteriol* 2000, 182 (22), 6401-11.
 - Zausig, Y. A. ; Chappell, D. ; Becker, B. F. ; Potschka, D. ; Busse, H. et al. The impact of crystalloidal and colloidal infusion preparations on coronary vascular integrity, interstitial oedema and cardiac performance in isolated hearts. *Critical Care* 2013, 17 (5), R203.
 - Ziganshina, M. M. ; Kulikova, G. V. ; Fayzullina, N. M. ; Yarotskaya, E. L. ; Shchegolev, A. I. et al. Expression of fucosylated glycans in endothelial glycocalyxes of placental villi at early and late fetal growth restriction. *Placenta* 2020, 90, 98-102.
 - Zubkova, O. V. ; Ahmed, Y. A. ; Guimond, S. E. ; Noble, S. L. ; Miller, J. H. et al. Dendrimer Heparan Sulfate Glycomimetics : Potent Heparanase Inhibitors for Anticancer Therapy. *ACS Chem Biol* 2018, 13 (12), 3236-3242.