Curriculum vitae

Vitor H. Pomin

Assistant Professor of Pharmacognosy, Department of Biomolecular Sciences, and Research Assistant Professor at the Research Institute of Pharmaceutical Sciences, School of Pharmacy, The University of Mississippi, USA. vpomin@olemiss.edu

Work (correspondence) address: 417A Faser Hall, School of Pharmacy, University, Oxford, MS, 38677-1848, USA.

Date of birth: 01-04-1980.

Education

1999-2003	Licentiate in Biological Sciences, Federal University of Rio de Janeiro (UFRJ), Brazil;
2004-2005	M.Sc. in Biological Chemistry, UFRJ, Brazil;
2005-2008	Ph.D. in Biological Chemistry, UFRJ, Brazil (under supervision of Professor Paulo A.S. Mourão);
2008-2011	Post-doctorate associate at laboratory of Emeritus and Eminent NMR Scholar Professor James H. Prestegard, Complex Carbohydrate Research Center (CCRC), University of Georgia (UGA), United States of America (USA).

Extra courses taken

2006	Workshop en RMN en Sistemas Biológicos, Instituto de Biologia Molecular y Celular de Rosario, Argentina (30 hours), taught by Prof.s Christian Griesinger, Steffen Glauser, and Rainer Kerssebaum;
2006	ECM, Integrins and Cell Signaling, Sociedade Brasileira de Biologia Celular, SBBq (15 hours), administered by Sociedade Brasileira de Bioquímica e Biologia Molecular (SBBq) (Brazilian Biochemistry and Molecular Biology Society);
2006	Understading Modern Pulse Sequense in Protein NMR, Instituto de Biologia Molecular y Celular de Rosario, Argentina (36 hours), taught by Prof.s Christian Griesinger and Steffen Glauser;
2008	Biomolecular Nuclear Magnetic Resonance, UGA, USA (48 hours), taught by Prof. James Prestegard.

Professional experience (research only)

2008-2011	Post-doctorate associate at CCRC, UGA, USA, under direct supervision of Eminent Scholar Prof. James H. Prestegard;
2011-present	Assistant Professor level III of Biochemistry and Chemical Biology at Federal University of Rio de Janeiro, and independent principal research investigator.

Honors, fellowships and awards

2000-2003	Scholarship from Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq), Brazil, to pursue laboratorial research during undergraduate course;
2004-2005	Masters scholarship from CNPq, Brazil;
2005-2008	PhD scholarship from CNPq, Brazil;
2007-2008	Six-month international integral-time PhD scholarship from CNPq, Brazil, to pursue research and tie collaboration with CCRC, UGA, USA;
2008-2010	International Post-doctorate scholarship from CNPq;
2010-2011	National Intitute of Health (NIH), grant GM033225 nominated to Prof. James H. Prestegard;
2013	Financial support for international meetings and events from CNPq.

Professional services and ad hoc reviews

2006-2008	Scientific counselors of *Delta do Prata Company*, RJ, Brazil;
2009-present	Reviewer and member of editorial board at *Journal of Agricultural Biotechnology and Sustainable Development*;
2010-present	Reviewer at *Phytochemistry*;
2010-present	Reviewer at *Marine Drugs*;
2010-present	Reviewer at *Carbohydrate Polymers*;
2011-present	Reviewer at *Advances in Biological Chemistry*;
2011-present	Reviewer and Member of editorial board at *Journal of Glycobiology*, OMICS Publishing Group;
2012-present	Reviewer at *Journal of Chromatography A*;
2012-present	Reviewer at *Biochimica et Biophysica Acta. General Subjects*;

2012-present Reviewer at *Journal of Biological Chemistry*;
2013-present Reviewer at *Biopolymers*;
2013-present Reviewer at ACS *Medicinal Chemistry Letters*;
2014-present Review editor at *Frontiers in Marine Biotechnology;*
2014-present Reviewer at ACS *Biochemistry*;
2014-present Reviewer at *Glycoconjugate Journal*;
2014-present Reviewer at *Current Protein and Peptide Science;*
2015-present Reviewer at *Glycobiology;*
2015-present Reviewer at MDPI *Molecules;*
2015-present Reviewer at *Angewandte Chemie (International Edition);*
2015-present Reviewer at *Biochimica et Biophysica Acta. Proteins and Proteomics;*
2015-present Reviewer at *International Journal of Biological Macromolecules;*
2015-present Reviewer at *Journal of Pharmaceutical and Biomedical Analysis*
2015-present Chairman Associate of Brazil in BRICS-Biomed Consortium
2015-present Reviewer at *Carbohydrate Research*
2015-present Reviewer at *International Journal of Biochemistry & Cell Biology*
2016-present Reviewer at *European Journal of Medicinal Chemistry*
2016-present Reviewer at *ClemPlusChem*
2016-present Reviewer at *Plos ONE*
2016-present Reviewer at *Journal of Functional Foods*
2016-present Reviewer at ACS *Analytical Chemistry*
2016-present Reviewer at *Chemistry – A European Journal*
2016-present Reviewer at *Analytica Chimica Acta*
2016-present Reviewer at ACS *Journal of Natural Products*
2016 Reviewer of grant proposal to the funding agency Fondo para la Investigación Científica y Tecnológica, Agencia Nacional De Promoción Científica Y Tecnológica-Argentina
2016 Reviewer of grant proposal to the funding agency FONDAZIONE CARIPLO (Italy)
2017-present Reviewer at *Scientific Reports*
2017-present Reviewer at *Journal of Applied Phycology*
2017-present Reviewer at *Current Analytical Chemistry*
2017-present Reviewer at *Biotechnology Advances*
2017-present Reviewer at MDPI *Pharmaceuticals*
2017-present Reviewer at *Thrombosis Research*
2017-present Reviewer at *Frontiers in Marine Science*
2017-present Reviewer at ACS *Chemical Reviews*
2017-present Reviewer at *Journal of Physical Chemistry*
2017-present Reviewer at *Current Drug Targets*
2017-present Reviewer at *Journal of Pharmacy and Pharmacology*
2017-present Reviewer at *Process Biochemistry*
2018-present Reviewer at *Biochemical Society Transactions*
2018-present Reviewer at *Current Organic Chemistry*
2018-present Reviewer at *Soft Matter*
2018-present Reviewer at *Bioanalysis*
2018-present Reviewer at *Algal Research (Biomass Biofuels and Bioproducts)*
2018-present Reviewer at *ChemMedChem*
2018-present Reviewer at *Biomedicine & Pharmacotherapy*
2018-present Reviewer at *Biochemical Society Transactions*
2018-present Reviewer at *Chemistry and Biodiversity*
2018-present Reviewer at *BioFactors*
2018-present Reviewer at *ACS Omega*
2018-present Reviewer at *Current Medicinal Chemistry*
2018-present Reviewer at *Journal of Cleaner Production*
2018-present Reviewer at *Cardiovascular Therapeutics (Print)*
2018-present Reviewer at *Bioanalysis*
2018-present Reviewer at *Journal of Inflammation Research*
2018-present Reviewer at *Advanced Biosystems*
2018-present Reviewer at *Bioanalysis*
2019-present Reviewer at *Bioconjugate Chemistry*
2019-present Reviewer of grant proposal to the Austria Science Fund.

Research interests

Glycobiology, structural (glyco)biology, NMR spectroscopy, and biomedical glycoscience.

Peer-review articles

1. Selective cleavage and anticoagulant activity of a sulfated fucan: stereospecific removal of a 2-sulfate ester from the polysaccharide by mild acid hydrolysis, preparation of oligosaccharides, and heparin cofactor II-dependent anticoagulant activity. Pomin VH, Pereira MS, Valente AP, Tollefsen DM, Pavão MS, Mourão PA. *Glycobiology* **2005**, 15:369-81;

2. Mild acid hydrolysis of sulfated fucans: a selective 2-desulfation reaction and an alternative approach for preparing tailored sulfated oligosaccharides. Pomin VH, Valente AP, Pereira MS, Mourão PA. *Glycobiology* **2005**, 15:1376-85;

3. The Hemolymph of the ascidian Styela plicata (Chordata-Tunicata) contains heparin inside basophil-like cells and a unique sulfated galactoglucan in the plasma. de Barros CM, Andrade LR, Allodi S, Viskov C, Mourier PA, Cavalcante MC, Straus AH, Takahashi HK, Pomin VH, Carvalho VF, Martins MA, Pavão MS. *J Biol Chem* **2007**, 282:1615-26;

4. The renal clearance of dextran sulfate decreases in puromycin aminonucleoside-induced glomerulosclerosis: a puzzle observation. Santos AM, Pomin VH, Stelling MP, Guimarães MA, Cardoso LR, Mourão PA. *Clin Chim Acta* **2007**, 383:116-25;

5. A preponderantly 4-sulfated, 3-linked galactan from the green alga *Codium isthmocladum*. Farias EH, Pomin VH, Valente AP, Nader HB, Rocha HA, Mourão PA. *Glycobiology* **2008**, 18:250-9;

6. Structure, biology, evolution, and medical importance of sulfated fucans and galactans. Pomin VH, & Mourão PA. *Glycobiology* **2008**, 18:1016-27;

7. Review: an overview about the structure-function relationship of marine sulfated homopolysaccharides with regular chemical structures. Pomin VH. *Biopolymers* **2009**, 91:601-9;

8. A unique 2-sulfated {beta}-galactan from the egg jelly of the sea urchin Glyptocidaris crenularis: conformation flexibility versus induction of the sperm acrosome reaction. Castro MO, Pomin VH, Santos LL, Vilela-Silva AC, Hirohashi N, Pol-Fachin L, Verli H, Mourão PA. *J Biol Chem* **2009**, 284:18790-800;

9. Structural and functional insights into sulfated galactans: a systematic review. Pomin VH. *Glycoconj J* **2010**, 27:1-12;

10. Unique extracellular matrix heparan sulfate from the bivalve *Nodipecten nodosus* (Linnaeus, 1758) safely inhibits arterial thrombosis after photochemically induced endothelial lesion. Gomes AM, Kozlowski EO, Pomin VH, de Barros CM, Zaganeli JL, Pavão MS. *J Biol Chem* **2010**, 285:7312-23;

11. Effects of oversulfated and fucosylated chondroitin sulfates on coagulation. Challenges for the study of anticoagulant polysaccharides. Fonseca RJ, Oliveira SN, Pomin VH, Mecawi AS, Araujo IG, Mourão PA. *Thromb Haemost* **2010**, 103:994-1004;

12. Characterization of glycosaminoglycans by ^{15}N-NMR spectroscopy and *in vivo* isotopic labeling. Pomin VH, Sharp JS, Li X, Wang L, Prestegard JH. *Anal Chem* **2010**, 82:4078-88;

13. LC-MS^n Sequencing of Isomeric Chondroitin Sulfate Oligosaccharides Using a Chemical Derivatization Strategy. Huang R, Pomin VH, Sharp JS. *J Am Soc Mass Spectrom* **2011**, 22:1577-87;

14. Recent Demands of Glycomics: Subprojects and the Role of New Journals. Pomin, VH. *J Glycobiol, OMICS Group* **2011**, 1:102e;

15. Fucanome and Galactanome: Marine Glycomics Contribution. Pomin VH. *J Glycobiol, OMICS Group* **2011**, 1:101;

16. Current Glycomics´ Approaches: Subprojects and Journals. Pomin VH. *J Glycom & Lipidom, OMICS Group* **2011**, 2:2;

17. Exploiting enzyme specificities in digestion of chondroitin sulfates A and C: production of well-defined hexasaccharides. Pomin VH, Park Y, Huang R, Heiss C, Sharp JS, Azadi P, Prestegard JH. *Glycobiology* **2012**, 22:826-38;

18. Structure *versus* Anticoagulant and Antithrombotic Actions of Marine Sulfated Polysaccharides. Pomin VH, Mourão PA. *Revis Bra Farmacogn* **2012**, 22:921-938;

19. Residual keratan sulfate in chondroitin sulfate formulations for oral administration. Pomin VH, Piquet AA, Pereira MS, Mourão PA. *Carbohydr Pol* **2012**, 90: 839-846;

20. Fucanomics and galactanomics: Current status in drug discovery, mechanisms of action and role of the well-defined structures. Pomin VH. *Biochem Biophys Acta-Gen Subj* **2012**, 1820:1971-1979;

21. Fucanomics and galactanomics: Marine distribution, medicinal impact, conceptions, and challenges. Pomin VH. *Mar Drugs* **2012**, 10: 793-811;

22. Advances in glycosaminoglycanomics by ^{15}N-NMR spectroscopy. Pomin VH. *Anal Bioanal Chem* **2012**, 405:3035-3048;

23. Marine sulfated glycans with serpin-unrelated anticoagulant properties. Glauser BF, Mourão PA, Pomin VH. *Adv Clin Chem* **2013**, 62:269-303;

24. Current status of fucanomics and galactanomics in drug discovery and glycomics. Pomin VH. *J Glycobiol, OMICS Group* **2013**, 2:104;

25. Testimonial for Journal of Glycobiology: a significant contribution of OMICS Publishing Group towards the progress of glycobiology and glycomics. Pomin VH. *J Glycobiol, OMICS Group* **2013**, (http://www.omicspublishinggroup.org/journals/glycobiology/);

26. NMR Chemical Shifts in Structural Biology of Glycosaminoglycans. Pomin VH. *Anal Chem* **2014**, 86: 65-94;
27. How to analyze the anticoagulant and antithrombotic mechanism of action in fucanome and galactanome? Pomin VH. *Glycoconj J* **2014**, 31:89-99;
28. Is the antithrombotic effect of sulfated galactans independent of serpin? Quinderé AL, Santos GR, Oliveira SN, Glauser BF, Fontes BP, Queiroz IN, Benevides NM, Pomin VH, Mourão PA. J Thromb Haemost **2014**, 12:43-53;
29. Marine medicinal glycomics. Pomin VH. *Front Cell Infect Microbiol* **2014**, 4:5;
30. Holothurian fucosylated chondroitin sulfate. Pomin VH. *Mar Drugs* **2014**, 12:232-254.
31. Solution NMR conformation of glycosaminoglycans. Pomin VH. *Progr Biophys Mol Biol* **2014**, 114:61-68.
32. Specific sulfation and glycosylation – a structural combination for the anticoagulation of marine carbohydrates. Pomin VH. & Mourão PA. *Front Cell Infect Microbiol* **2014**, 4:33;
33. Anticoagulant motifs of marine sulfated glycans. Pomin VH. *Glycoconj J* **2014**, 31:341-344;
34. NMR-based dynamics of free glycosaminoglycans in solution. Pomin VH. *Analyst* **2014**, 139:3656-3665.
35. Unique properties of human β-defensin 6 (hBD6) and glycosaminoglycan complex: sandwich-like dimerization and competition with the chemokine receptor 2 (CCR2) binding site. de Paula VS, Pomin VH, Valente AP. *J Biol Chem* **2014**, 289: 22969-22979;
36. Biological findings from the recent NMR-based studies of glycosaminoglycan-protein interactions. Pomin VH. *Glycobiology* **2014**, 24:991-1003;
37. Structural and functional analyses of bovine and porcine intestinal heparins confirm they are different drugs. Santos GR, Tovar AM, Capillé NV, Pereira MS, Pomin VH, Mourão PA. *Drug Discov Today* **2014**, 19: 1801-1807;
38. Sea, carbohydrates and clotting: a triad on the road of drug discovery. Pomin VH. *Mini Rev Med Chem* **2014**, 14:717-724;
39. Heparin-Binding Proteins (Chemokines and Defensins) and their complexes with glycosaminoglycans from the solution NMR perspective. Pomin VH. *Curr Protein Pept Scien* **2014**, 15:738-744;
40. Keratan sulfate: An up-to-date review. Pomin VH. *Int J Biol Macromol* **2014**, 72C:282-289;
41. Structural and functional analyses of biosimilar enoxaparins available in Brazil. Oliveira SN, Santos GR, Glauser BF, Capille NV, Queiroz IN, Pereira MS, Pomin VH, Mourão PA. *Thromb Haemost* **2015**, 113:53-65;
42. Impact of sulfation pattern on the conformation and dynamics of sulfated fucan oligosaccharides by NMR and MD. Queiroz IN, Wang X, Glushka J, Santos GR, Valente AP, Prestegard JH, Woods RJ, Mourão PA, Pomin VH. *Glycobiology* **2015**, 25: 535-547;
43. Sulfated glycans in inflammation. Pomin VH. *Eur J Med Chem* **2015**, 92C: 353-369;
44. Sulfated glycans in sea urchin fertilization. Pomin VH. *Glycoconj J* **2015**, 32: 9-15;
45. Current structural biology of the heparin interactome. Pomin VH, Mulloy B. *Curr Opin Struct Biol* **2015**, 34: 17-25;
46. NMR structural biology of invertebrate glycosaminoglycans of unique structure and potential use in medicine. Pomin VH. *Carbohydr Res* **2015,** 413: 41-30;
47. Antimicrobial sulfated glycans: structure and function. Pomin VH. *Curr Top Med Chem* **2015** (*in press*);
48. A dilemma in the glycosaminoglycan-based therapy: synthetic or naturally unique molecules? Pomin VH. *Med Res Rev* **2015**, 35: 1195-1219;
49. Medical gains of chondroitin sulfate upon fucosylation. Pomin VH. *Curr Med Chem* **2015,** 22: 4166-4176;
50. Marine Non-Glycosaminoglycan Sulfated Glycans as Potential Pharmaceuticals. **Pomin VH**. *Pharmaceuticals (Basel)* **2015,** 8: *848-864;*
51. NMR structural biology of sulfated glycans. Soares PAG, Queiroz, INL, Pomin VH. *J. Biomol Struc & Dyn* **2016** (in press);
52. Dual and antagonic therapeutic effects of sulfated glycans. Pomin VH. *Bioorg & Med Chem* **2016,** 24: 3965-3971;
53. Phylogeny, structure, function, biosynthesis and evolution of sulfated galactose-containing glycans. Pomin VH. *Int J Biol Macromol* **2016**, 84: 372-379;
54. NMR-based conformation and dynamics of a tetrasaccharide-repeating sulfated fucan substituted by different counterions. Soares PAG; Queiroz INL; Santos GR; Mourão PA; Pomin VH. *Biopolymers* **2016,** 105: 840-851;
55. Paradigms in the structural biology of the mitogenic ternary complex FGF:FGFR:heparin. Pomin VH. Biochimie **2016**, 127: 214-226;
56. Oligosaccharides from the 3-linked 2-sulfated alpha-L-fucan and alpha-L-galactan show similar conformation but different dynamics. Queiroz INL, Vilela-Silva AC, Pomin VH. *Glycobiology* **2016,** 26: 1257-1264;
57. (1)H and (15)N NMR analyses on heparin, heparan sulfates and related monosaccharides confirm fast exchange property of the N-sulfo-glucosamine sulfamate proton. Pomin VH. *Pharmaceuticals (Basel)* **2016,** 9: 58;
58. The contribution of Glycobiology to the Zika outbreak in the Americas. Pomin VH. *Glycobiology* **2016,** 26: 680-682;
59. Sulfated glycans and related digestive enzymes in the Zika virus infectivity: potential mechanisms of virus-host interaction and perspectives in drug discovery. Pomin VH. *Interdiscip Perspect Infect Dis* **2017**, 2017:1-8;
60. The sea as a rich source of structurally unique and medically active glycosaminoglycans and mimetics. Vasconcelos, AA, Pomin VH. *Microorganisms* **2017**, 5(3):pii: E51;
61. Synthetic oligosaccharide libraries and microarray technology: a powerful combination for the success of the current glycosaminoglycan interactomics. Pomin VH, Wang X. *ChemMedChem* **2018**, 13(7):648-661;
62. Glycosaminoglycans and Proteoglycans. Pomin VH, Mulloy B. *Pharmaceuticals (Basel)* **2018**, 1(1). pii: E27.
63. Marine Carbohydrate-Based Compounds with Medicinal Properties. Vasconcelos AA, Pomin VH. *Mar Drugs* **2018,** 16(7). pii: E233.

64. Anticoagulant and Antithrombotic Properties of Three Structurally Correlated Sea Urchin Sulfated Glycans and Their Low-Molecular-Weight Derivatives. Vasconcelos AA, Sucupira ID, Guedes AL, Queiroz IN, Frattani FS, Fonseca RJ, Pomin VH. *Mar Drugs* **2018**, 16(9). pii: E304.
65. Glycosaminoglycan-Protein Interactions by Nuclear Magnetic Resonance (NMR) Spectroscopy. Pomin VH, Wang X. *Molecules* 2018 Sep 11;23(9). pii: E2314.
66. Chondroitin sulfate isolated from the secretion of the venom-producing parotoid gland of Brazilian bufonid. da Silva HAM, de Queiroz INL, Francisco JS, Pomin VH, Pavão MSG, de Brito-Gitirana L. *Int J Biol Macromol* **2018**, 124:548-556.
67. New antithrombotic carbohydrates from the sea. Pomin VH. *Mar Drugs* **2019** (in writing);
68. Current and potential therapeutic application of galactosaminoglycans. Vasconcelos AA, Gonzales A, Vignovich W, Mulloy B, Pomin VH. *Eur J Med Chem* **2019**, (invited paper);
69. Solution 3D structures of fucose and the tetrasaccharide repeating building block of the sulfated fucan from *Lytechinus variegatus* as seen by NMR and MD. Bezerra FF, Aderibigbe A, Liu H, Sharp J, Doerksen R, Pomin VH. *J Struc Biol* **2019** (in writing).

Book chapter and book editor

1. Chapter 7 – Analysis of Cellulose Using NMR Spectroscopy. Author: Vitor H. Pomin. Book: Cellulose: Structure and Properties, Derivatives and Industrial Uses, at Nova Science Publishers. Editors: Arnaud Lejeune and Thibaut Deprez, **2010**.
2. Chapter 11 - Structure and Use of Algal Sulfated Fucans and Galactans. Author: Vitor H. Pomin. Book: Handbook of Marine Macroalgae, at Wiley-Blackwell. Editor: Se-Kwon Kim, **2011**.
3. Book: Seaweed: Ecology, Nutrient Composition, and Medicinal Uses, at Nova Science Publishers. Editor: Vitor H. Pomin, **2011**.
4. Chapter 1 – The Science of Repeating Disaccharide-Composed Glycosaminoglycans. Author: Vitor H. Pomin and Younghee Park. Book: Advances in Chemistry Research, vol. 12, at Nova Science Publishers. Editor: James C. Taylor, **2011**.
5. Chapter 12 – Structure-Function Relationship of Anticoagulant and Antithrombotic Well-Defined Sulfated Polysaccharides from Marine Invertebrates. Author: Vitor H. Pomin. Book: Marine Medicinal Foods. Volume 65, Implications and Applications: Animals and Microbes (*Advances in Food and Nutrition Research*), at Academic Press. Editor: Se-Kwon Kim, **2012**.
6. Chapter 19 – Marine Sulfated Polysaccharides with Unusual Anticoagulant Action through an Additional Unrelated-Natural Inhibitors Mechanism. Author: Bianca Glauser, Paulo AS Mourão, Vitor H. Pomin. Book: Marine Nutraceuticals: Prospects & Perspectives, at Taylor & Francis Group. Editor: Se-Kwon Kim, **2012**.
7. Chapter 4 – Unraveling Glycobiology by NMR Spectroscopy. Author: Vitor H. Pomin. Book: Glycosylation, at InTech. Editor: Stefana Petrescu, **2012.**
8. Book: Marine Medicinal Glycomics, at Nova Science Publishers. Editor: Vitor H. Pomin, **2013**;
9. Chapter 8 - Structure-Function Relationship of Anticoagulant and Antithrombotic Marine Sulfated Polysaccharides of Well-Defined Chemical Structures. Author: Vitor H. Pomin. Book: Marine Medicinal Glycomics, at Nova Science Publishers, editor: Vitor H. Pomin, **2013**;
10. Chapter 9 – Marine sulfated glycans with an unusual serpin-independent anticoagulant action. Authors: Bianca F Glauser, Paulo A Mourão, and Vitor H. Pomin. Book: Marine Medicinal Glycomics; at Nova Science Publishers. Editor: Vitor H. Pomin, **2013**;
11. Book: Chondroitin sulfate: structure, uses and health implications; at Nova Science Publishers. Editor: Vitor H. Pomin, **2013**;
12. Chapter 4 – Understanding specificities in enzymatic digestions of chondroitin sulfates A and C by monitoring sulfation patterns of the produced oligosaccharides. Author: Vitor H. Pomin. Book: Chondroitin sulfate: structure, uses and health implications; at Nova Science Publishers. Editor: Vitor H. Pomin, **2013**;
13. Chapter 8 – Fucosylated chondroitin sulfate: a serpin-independent anticoagulant polysaccharide. Author: Vitor H. Pomin. Book: Chondroitin sulfate: structure, uses and health implications; at Nova Science Publishers. Editor: Vitor H. Pomin, **2013**;
14. Chapter 11 - Structural analysis of chondroitin sulfates and their derivatives by ^{15}N-NMR spectroscopy. Authors: Vitor H. Pomin. Book: Chondroitin sulfate: structure, uses and health implications; at Nova Science Publishers. Editor: Vitor H. Pomin, **2013**;
15. Book: Seaweed: Agricultural Uses, Biological and Antioxidant Agents; at Nova Science Publishers. Editor: Vitor H. Pomin, **2014**;
16. Book: Galactose: Chemical Structure, Dietary Sources and Clinical Significance; at Nova Science Publishers., Editor: Vitor H. Pomin, **2014**;
17. Book: Hyaluronan: Medical Uses, Biological Synthesis and Role in Wound Healing; at Nova Science Publishers. Editor: Vitor H. Pomin, **2014**;
18. Chapter: Sulfated polysaccharide-dependent activation of sperm in sea urchin fertilization. Authors: Ana Cristina Vilela-Silva, Vitor H. Pomin, Paulo A.S. Mourão. Book: Glycoscience: Biology and Medicine. Section: Develpmental Glycobiology; at Springer. Editors: T. Endo, P.H. Seeberger, G.W. Hart, C.-H. Wong, N. Taniguchi, **2014**;
19. Chapter 10: Aanlysis of glycosaminoglycans by ^{15}N-NMR spectroscopy. Authors: Vitor H. Pomin. Book: NMR in Glycoscience and Glycotechnology; at Royal Society of Chemistry. Editors: Thomas H. Peters and Koichi Kato, **2017**.

20. Chapter 6 - Structural mechanisms involved in mild- acid hydrolysis of a defined tetrasaccharide-repeating sulfate fucan. Authors: Francisco F. Bezerra, Vitor H. Pomin. Book: Enzymatic Technologies for Marine Polysaccharides; at CRC Press Taylor & Francis Publisher. Editor: Antonio Trincone, **2019.**
21. Chapter 29 - Leveraging genome sequencing strategies for basic and applied algal research, exemplified by case studies. Authors: Ariana A. Vasconcelos, Vitor H. Pomin. Book: Handbook of Algal Technologies and Phytochemicals: Nutritional, Nutraceutical, Pharmaceutical and Multifarious Applications; at CRC Press USA. Editors: Prof. Dr. Ravishankar Gokare and Dr. Rangarao Ambati.

Presentation (official invited talks only)
1. Plenary lecture: Structural analysis of glycosaminoglycans by ^{15}N-NMR spectroscopy. Application of oligosaccharides in binding assays to CCL5. I Centro Nacional de Ressonância Nuclear Magnética, Brazil, August 16th, **2011**.
2. Plenary lecture: Structural analysis of glycosaminoglycans by ^{15}N-NMR spectroscopy. Application of oligosaccharides in binding assays to CCL5. I Simpósio de Biologia Estrutural e Molecular de Plantas, Departamento de Bioquímica e Biologia Molecular da Universidade Federal do Ceará, Brazil, September 30th, **2011**.
3. Plenary lecture: NMR studies of Glycosaminoglycans by ^{15}N-isotope and of Oligosaccharides in Chemokine-Binding Assays. Ciclo de Seminários no Programa de Pós-graduação em alimentos do Departamento de Bioquímica, Instituto de Química, UFRJ, Brazil, May 17th, **2012**.
4. Plenary lecture: Glycosaminoglycanome, Fucanome and Galactanome: Biology towards Glycome. Pós-graduação do Instituto Militar de Engenharia, IME, Brazil, May 17th, **2013.**
5. Plenary lecture: Fucanomics and galactanomics. Ciclo de Seminários no Programa de Pós-graduação em alimentos do Departamento de Bioquímica, Instituto de Química, UFRJ, Brazil, May 23rd, **2013**.
6. Plenary lecture and chairman: Fucanomics and Galactanomics. International Conferences on Omics Studies, Orlando, FL, USA, September 4th, **2013.**
7. Plenary lecture: Fucanomics and Galactanomics: Marine Glycans with Differential Actions in Coagulation and Thrombosis. International Conferences on Hematology & Blood Disorders, Raleigh, NC, USA, September 25th, **2013.**
8. Plenary lecture and chairman: Advances in structural biology of glycosaminoglycans by ^{15}N-NMR spectroscopy. 6th International Conference and Exhibition on Analytical & Bioanalytical Techniques, Valencia, Spain, September 1st, **2015**.
9. Plenary lecture at Food Science & Technology Department at University of Nebraska-Lincoln: Structural Glycobiology of Sulfated Glycans: Past, Present and Future, Lincoln, Nebraska, USA, September 7th, **2016**.
10. Plenary lecture at Department of BioMolecular Sciences, School of Pharmacy, the University of Mississippi: NMR Structural Biology of Therapeutic Sulfated Glycans, Oxford, MS, USA, February 16th, **2017**.
11. Plenary lecture at Department of Chemistry and Medicinal Chemistry Symposium, Virginia Commonwealth University: NMR structural biology of therapeutic sulfated glycans, Richmond, VA, USA, December 6th, **2018**.

Scientific congresses, conferences and meetings
Participation in more than 50 international scientific events in Brazil, USA and European Union.

Student supervision in scientific research
Post-doctorate
- Paulo Antonio Galindo Soares, **2015-2016**, (supervisor).

Graduate
- Ismael Nilo Lino de Queiroz, **2014-2017**, (PhD supervisor – thesis defended in April 2017);
- Francisco Felipe Bezerra, **2016-present**, (PhD supervisor);
- Ariana Azevedo Vasconcelos, **2016-present**, (PhD supervisor);
- William Vignovich, **2018-present,** (PhD supervisor);
- Alysia Gonzales, **2018-present,** (PhD supervisor).

Undergraduate
- Artur Rodrigues Maio, **2015-2017,** (undergraduate student from School of Pharmacy);
- Leonardho Dimitriadis, **2014-2015,** (undergraduate student from School of Pharmacy);
- Natália da Silva Marques, **2014-2015,** (undergraduate student from School of Pharmacy);
- Heitor de Souza Bittencourt, **2013-2014,** (undergraduate student from Physics Department);
- Mariana de Sousa Amarante, **2012-2013,** (undergraduate student from Nutrition Department);

- Gabriel Baptista de Sá, **2011-2012**, (undergraduate student from School of Pharmacy);
- Eron Falcão de Carvalho, **2012-2013**, (undergraduate student from Chemistry Department);
- Bruno Cunha Vairo, **2006-2008**, (undergraduate student from Biology Department).

Courses taught

Graduate courses (annually)

- NMR Structural Glycobiology, **2012-present.**

Undergraduate courses (biannually)

- Topics in Glycobiology, **2011-present;**
- Biochemistry I (structure and function of carbohydrates and lipids), **2011-present.**