



Curriculum Vitae

Personal information Fabrizio Chiodo

Work experience

01.01.2023– current	<p>Research Associate Professor, Italian National Research Council (CNR), Institute of Biomolecular Chemistry, Naples, Italy</p> <p>- <i>Studying adaptive and innate responses of non-mammalian glyco-conjugates, mostly in the context of conjugate-vaccines, host-pathogen interactions and cancer.</i></p>
01.10.2020–31.12.2022	<p>Research Assistant Professor, Italian National Research Council (CNR), Institute of Biomolecular Chemistry, Naples, Italy</p>
01.11.2018–current	<p>Senior Researcher (Amsterdam Infection and Immunity Institute) now Visiting Fellow</p> <p>Molecular Cell Biology and Immunology Department, Amsterdam UMC, Amsterdam.</p> <p>Independent Researcher in the group of Y. van Kooyk.</p> <p>-<i>Studying the roles of bacterial carbohydrates (capsules and LPS) in modulating innate immune responses.</i></p>
16.03.2016–current	<p>Invited Lecturer (Profesor Adjunto)</p> <p>Faculty of Chemistry, Havana University, Cuba.</p> <p>-<i>Course: Carbohydrates as vaccines and immune modulators.</i></p>
01.11.2017–01.11.2018	<p>Senior Researcher</p> <p>Leiden Institute of Chemistry (Bio-organic Synthesis Department).</p> <p>Independent Researcher in the group of J. Codee and G. van der Marel.</p> <p>-<i>Role of bacterial carbohydrates in modulating innate immune responses in the context of conjugate-vaccines: how carbohydrates can modulate vaccine efficacy.</i></p>
01.1.2014–01.11.2017	<p>NWO VENI Fellow, Independent Postdoctoral Researcher</p> <p>Host Institutes: Leiden Institute of Chemistry (Bio-organic Synthesis Department) and Leiden University Medical Center (Parasitology Department), Leiden, The Netherlands.</p> <p>Independent Researcher in the group of J. Codee and G. van der Marel.</p> <p>Independent Researcher in the group of C. H. Hokke.</p> <p>-<i>Role of bacterial carbohydrates in modulating innate immune responses on conjugate-vaccines: how carbohydrates can modulate vaccine efficacy.</i></p> <p>-<i>Construction and exploration of modular gold-nanoparticles for glycan- based immune-intervention of worm infections.</i></p>

01.12.2013-31.10.2014	<p>Postdoctoral Researcher</p> <p>Parasite GlycoBiology Group, Leiden University Medical Center, Leiden, The Netherlands. C. H. Hokke Group.</p> <p><i>-Preparation of goldnanoparticles coated with Schistosoma mansoni carbohydrates. Development of "shotgun" approach to prepare glyco-goldnanoparticles from natural sources.</i></p> <p><i>-Studying the innate role of glycans on carbohydrate-based vaccines against Haemophilus influenzae and Streptococcus pneumoniae on human antigen presenting cells.</i></p>
01.04.2013-30.11.2013	<p>Guest Postdoctoral Researcher</p> <p>Vrije University Medical Center, Amsterdam, The Netherlands. Y. van Kooyk Group.</p> <p><i>-Studying the cellular effects of α-fucosylamide functionalized gold-nanoparticles for DC-SIGN targeting.</i></p> <p><i>-Glycan nanoprofiling by weak anion exchange preparative chromatography.</i></p>
01.10.2011-01.04.2012	<p>Guest PhD Student</p> <p>Vrije University Medical Center, Amsterdam, The Netherlands. Supervisors: Y. van Kooyk and I. van Die.</p> <p><i>-Behaviour of human dendritic cells and T cells stimulated with gold-nanoparticles coated with Lewis X antigen and other self carbohydrate-antigens.</i></p> <p><i>-Study of maturation markers, cytokines production, mixed leukocytes reaction, proliferation assay and T cells skewing assay.</i></p> <p><i>-Studying the role of galactofuranose on human dendritic cells by mean of glyco-goldnanoparticles.</i></p> <p><i>-Design of a new sensitive ELISA-like approach for biomarkers detection based on glyco-gold-nanoparticles</i></p>
01.10.2008-01.03.2013	<p>PhD Student</p> <p>CIC BiomaGUNE (public non-profit research organization), San Sebastian, Spain. Supervisor: S. Penadés.</p> <p><i>-Synthesis of complex oligosaccharides (Manα,1-2 containing oligomannosides) related with HIV gp120 envelope glycoprotein. Synthesis of Lewis-type oligosaccharides by chemo-enzymatic synthesis.</i></p> <p><i>-Preparation and characterization of glyco-goldnanoparticles as carbohydrate-based vaccines platform against Streptococcus pneumoniae and HIV.</i></p> <p><i>-Preparation of gold-nanoparticles as drug delivery system for anti-retroviral drugs</i></p>
01.10.2006-01.07.2008	<p>Master Student</p> <p>Department of Pharmaceutical Technology, University of Palermo, Italy. Supervisor: L. I. Giannola.</p> <p><i>-Preparation and characterization of liposomes containing trehalose for cellular cryopreservation.</i></p> <p><i>-Preparation of classic and advanced galenic formulations as drug delivery systems.</i></p>

Education and training

October 2008-March 2013 PhD in Applied Chemistry
CIC biomaGUNE/University of Basque Country (Spain)

Development of glycan-based anti-microbial vaccines (nanosystems)

September 2003-September 2008 Master degree
University of Palermo (Italy)
Pharmaceutical Sciences

Additional information

Publications

57 peer-reviewed articles (in 12 of them I am corresponding author, in 10 of them I am the main/first author), 3 book chapters, 1 pre-print and 1 didactic electronic chapter (glycopedia). *h-index*: 25 (Scopus); 29 (Google scholar). Citations: 1898 (Scopus); 2540 (Google scholar).

62. Ghevondyan D., Margaryan A., [Chiodo F.](#), van Kooyk Y., Finore I., Poli A., Panosyan H. Genomic and chemical insights into a human lectin-binding extracellular polysaccharides from *Parageobacillus toebii* strain H-70. *PLoS One*. **2026**, 21(1):e0340423. doi: 10.1371/journal.pone.0340423. IF=2.6.
61. Biagiotti G., Purić E., Tricomi J., Mravljak J., Cicchi S., Laurati M., van Kooyk Y., [Chiodo F.](#), Urbančič I., Anderluh M., Richichi B. A nonavalent BODIPY with a multivalent arrangement of α-mannosides enables lectins recognition in fluorescence-based assays. *RSC Chem Biol*. **2025** doi: 10.1039/d5cb00190k. Epub ahead of print. IF=3.1.
60. Manente R., De Caro G., Paris D., Tramice A., Boccia G., Zeppa P., [Chiodo F.](#), Iovino P. The Impact of the Oral and Esophageal Microbiota in EoE and Achalasia. *J Clin Med*. **2025**, 14(21):7502. doi: 10.3390/jcm14217502. IF=3.3
59. De Simone Carone L., Barra G., Cirella R., Ziaco M., Mercogliano M., Olmeo F., Andretta E., Mazziotti V., Fusco C., D'Ippolito G., Duda K.A., Farquharson F.M., Louis P., Fontana A., Silipo A., Molinaro A., [Chiodo F.](#), Di Lorenzo F. Decoding a Gut Commensal Signal: Structural and Immunological Profiling of Segatella copri Lipopolysaccharide. **2025** *Angew Chem Int Ed Engl.*, 64(48):e202512947. doi: 10.1002/anie.202512947. IF=16.9.
58. Ghevondyan D., Hakobyan A., Margaryan A., Finore I., Cattaneo A., [Chiodo F.](#), Birkeland NK, Poli A., Panosyan H. Production, characterization, and genomic insights of a human lectin-binding exopolysaccharide from *Haloarcula japonica* strain SST1. **2025** *Scientific Reports*, 15(1):34727. doi: 10.1021/jacsau.5c00214. IF=3.9.
57. Di Carluccio C, Gerpe Amor T, Lenza MP, Masi AA, Abreu C, Longo V, Albano F, Nieto-Fabregat F, Salvatore P, Falco G, Santana-Medero D, Fragai M, van Kooyk Y, Molinaro A, Valdes-Balbin Y, Vaněk O, Verež-Bencomo V, Marchetti R, [Chiodo F.](#), Silipo A. Molecular Basis of Siglec-7 Recognition by *Neisseria meningitidis* Serogroup Y CPS: Implications for Immune Evasion. **2025** *JACS Au*. 5(5):2257-2269. doi: 10.1021/jacsau.5c00214. IF=8.6.
56. Leone S, Giugliano R, Borgonuovo C, [Chiodo F.](#), Molinaro A, Zannella C, De Filippis A, Galdiero M, van Kooyk Y, De Chiara S, Magnabosco C, Di Lorenzo F, Romano G. Structural insights and bioactivity of a cell wall sulfated polysaccharide from the marine diatom *Cyclotella cryptica*. **2025** *Int J Biol Macromol*. 311(Pt 1):143611. doi: 10.1016/j.ijbiomac.2025.143611. IF=7.7
55. Nardini E, Keumatio Dounstap BC, Gerpe-Amor T, de Haas AM, de Kok M, Peterse E, Kalay H, Li RE, [Chiodo F.](#), Silipo A, Voorberg J, van Kooyk Y. Rational design of FVIII sialylated peptides to target Siglec-3 and Siglec-9 and improve peptide formulations for reverse vaccines. **2025** *Front Bioeng Biotechnol*. 10;13:1558627. doi: 10.3389/fbioe.2025.1558627. IF=4.3
54. Petro TM, Esmael A, Pattee GL, Al-Sarmi F, [Chiodo F.](#), Agarkova IV, Dunigan DD, Van Etten JL. Expression of human superoxide dismutase (SOD) 1 G93A and chlorovirus ATCV-1 SOD increases the response of macrophages to inflammatory stimulants, including ATCV-1 major capsid protein glycans. **2025** *Immunobiology*. 230(2):152881. doi: 10.1016/j.imbio.2025.152881. IF: 2.5
53. I. Speciale, A. Notaro, S. Bruijns, Y. van Kooyk, A. Esmael, A. Molinaro, F. Balzarini, E. Rodriguez, T.M. Petro, I.V. Agarkova, G.L. Pattee, J.L. Van Etten, C. De Castro, [F. Chiodo*](#). Carbohydrate-Mediated Interactions Between Chloroviruses and the Immune System. *Communications Biology* **2024**, Just accepted. IF= 5.2. *Corresponding author.
52. M. Tiemblo Martín, M. Coccimiglio, E. Andretta, L. De Simone Carone, A. Bell, T. Guerpe Amor, C. Di Carluccio, A. Molinaro, Y. van Kooyk, N. Juge, [F. Chiodo](#), F. Di Lorenzo, A. Silipo. The human gut *Bacteroides egerthii* expresses a new galactofuranose-containing lipooligosaccharide with weak immunostimulatory properties. *Carbohydrate Polymers*, 348, Part A, **2025**,122833. IF=10.7.
51. Nieto-Fabregat F, Zhu Q, Vivès C, Zhang Y, Marseglia A, [Chiodo F.](#), Thépaut M, Rai D, Kulkarni SS, Di Lorenzo F, Molinaro A, Marchetti R, Fieschi F, Xiao G, Yu B, Silipo A. Atomic-Level Dissection of DC-SIGN Recognition of *Bacteroides vulgatus* LPS Epitopes. *JACS Au*. **2024**, 12, 4(2):697-712. IF=8.0.
50. Pither MD, Andretta E, Rocca G, Balzarini F, Matamoros-Recio A, Colicchio R, Salvatore P, van Kooyk Y, Silipo A, Granucci F, Martin-Santamaria S, [Chiodo F.](#), Molinaro A, Di Lorenzo F. Deciphering the Chemical Language of the Immunomodulatory Properties of *Veillonella parvula* Lipopolysaccharide. *Angew Chem Int Ed Engl*. **2024**, 22, 63(17):e202401541. IF=16.6.
49. M. Coccimiglio, [F. Chiodo](#), Y. van Kooyk. The sialic acid-Siglec immune checkpoint: an opportunity to enhance immune responses and therapy effectiveness in melanoma. **2024**, *British Journal of Dermatology*. doi: 10.1093/bjd/ljad517 Just accepted. IF= 10.3.
48. MAM Chayé, TA Gasan, A. Ozir-Fazalalikhani, MR Scheenstra, A. Zawistowska-Deniziak, ORJ van Hengel, M. Gentenaar, MD Manurung, MR Harvey, JDC Codée, [F. Chiodo](#), AM Heijke, A. Kalinowska, A. van Diepen, PJ Hensbergen, M. Yazdanbakhsh, B. Guigas, CH Hokke, HH Smits. *Schistosoma mansoni* egg-derived thioredoxin and Sm14 drive the development of IL-10 producing regulatory B cells. **2023**, *PLoS Negl Trop Dis.*, 17(6):e0111344.
47. Biagiotti G, Toniolo G, Albino M, Severi M, Andreozzi P, Marelli M, Kokot H, Tria G, Guerri A, Sangregorio C, Rojo J, Berti D, Marradi M, Cicchi S, Urbančič I, van Kooyk Y, [Chiodo F.](#), Richichi B. Simple engineering of hybrid cellulose nanocrystal-gold nanoparticles results in a functional glyconanomaterial with biomolecular recognition properties. **2023**, *Nanoscale Horiz.*, 8, 776-782. *Corresponding author
46. Wang Z, Gimeno A, Lete MG, Overkleef HS, van der Marel GA, Chiodo F, Jimenez-Barbero J, Codee JDC. Synthetic Zwitterionic *Streptococcus pneumoniae* Type 1 Oligosaccharides Carrying Labile O-Acetyl Esters. **2022**, *Angew Chem Int Ed Engl*. 2, 62:e202211940.

45. Mukherjee R, Somovilla VJ, Chiodo F, Bruijns S, Pieters RJ, Garssen J, van Kooyk Y, Kraneveld AD, van Bergenhenegouwen J. Human Milk Oligosaccharide 2'-Fucosyllactose Inhibits Ligand Binding to C-Type Lectin DC-SIGN but Not to Langerin. 2022, International Journal of Molecular Sciences, 23, 14744
44. R. Ochoa-Azze; [...] F. Chiodo; A. Calcagno; V. Ghisetti; M. Rodriguez-Acosta; E. Noa-Romero; J. Enriquez-Puertas; D. Ortega-Leon; I. Valdivia-Alvarez; A. Delahanty Fernandez; A. Palenzuela-Diaz; L. Rodriguez-Noda; R. Gonzalez-Mugica; Y. Valdes-Balbin; D. Garcia-Rivera; V. Verez-Bencomo. An open-label phase IIa and double-blind, randomised, placebo-controlled phase IIb seamless clinical trial of FINLAY-FR-1A vaccine confirmed its safety and immunogenicity in COVID-19 convalescents, 2022, The Lancet Respiratory Medicine, 10, 785-795.
43. N. Hribernik, F. Chiodo, R.J. Pieters, A. Bernardi. Rhamnose-based glycomimetic for recruitment of endogenous anti-rhamnose antibodies. 2022, Tetrahedron Letters, 99, 153843.
42. Santana-Mederos, D., Perez-Nicado, R., Climent, Y., Rodriguez, L., Ramirez, B.S., Perez-Rodriguez, S., Rodriguez, M., Labrada, C., Hernandez, T., Diaz, M., Orosa, I., Ramirez, U., Oliva, R., Garrido, R., Cardoso, F., Landys, M., [...], Ojito, E., Chiodo, F., Fernandez, S., Garcia-Rivera, D., Fang, C., Chen, G.-W., Rivera, D.G., Valdes-Balbin, Y., Garcia-Rivera, D., Verez Bencomo, V. A COVID-19 vaccine candidate composed of the SARS-CoV-2 RBD dimer and *Neisseria meningitidis* outer membrane vesicles, 2022, RSC Chemical Biology, 3, 242-249.
41. Glycan array evaluation of synthetic epitopes between the capsular polysaccharides from *Streptococcus pneumoniae* 19F and 19A. L. Morelli, L. Lay, D. Santana-Mederos, Y. Valdes-Balbin, V. Verez-Bencomo, A. van Diepen, C. Hokke, F. Chiodo*, F. Compostella. 2021, ACS Chemical Biology, 7, 757-767. *Corresponding author
40. Molecular aspects concerning the use of SARS-CoV-2 Receptor Binding Domain as target for preventive vaccines. Y. Valdes-Balbin, D. Santana-Mederos, F. Paquet, S. Fernandez, Y. Climent, F. Chiodo, L. Rodriguez, B. Sanchez-Ramirez, K. Leon, T. Hernandez, L. Castellanos-Serra, R. Garrido, G.-W. Chen, D. Garcia-Rivera, D. Rivera, V. Verez-Bencomo. 2021, ACS Central Science, 7, 757-767.
39. Synthesis and antibody binding studies of schistosome-derived oligo- α -(1-2)-l-fucosides. M. Harvey, F. Chiodo, W. Noest, C. Hokke, G. van der Marel, J. D.C. Codee. 2021, Molecules, 26, 2246.
38. SARS-CoV-2 RBD-Tetanus toxoid conjugate vaccine induces a strong neutralizing immunity in preclinical studies. Y. Valdes-Balbin, D. Santana-Mederos, L. Quintero, S. Fernandez, L. Rodriguez, B. Sanchez-Ramirez, R. Perez, [...], F. Chiodo, F. Paquet, G. Chen, D. G. Rivera, D. Garcia-Rivera, V. Verez-Bencomo. 2021, ACS Chemical Biology, 16, 1223-1233.
37. Human C-Type Lectins, MGL, DC-SIGN and Langerin, Their Interactions With Endogenous and Exogenous Ligand Patterns. F. Chiodo, A. de Haas, S. J van Vliet, Y. van Kooyk. Comprehensive Glycoscience, 2nd edition, Elsevier 2021.
36. M. Anderluh, F. Berti, A. Bzducha-Wrobel, F. Chiodo, C. Colombo, F. Compostella, K. Durlik, X. Ferhati, R. Holmdahl, D. Jovanovic, W. Kaca, L. Lay, M. Marinovic-Cincovic, M. Marradi, M. Ozil, L. Polito, J.J. Reina-Martin, C.A. Reis, R. Sackstein, A. Silipo, U. Svajger, O. Vanek, F. Yamamoto, B. Richichi, S.J. van Vliet. Recent advances on smart glycoconjugate vaccines in infections and cancer. 2021, The FEBS Journal. 10.1111/febs.15909.
35. Analysis of Synthetic Monodisperse Polysaccharides by Wide Mass Range Ultrahigh-Resolution MALDI Mass Spectrometry. S. Nicolardi, A. A. Joseph, Q. Zhu, Z. Shen, A. Pardo-Vargas, F. Chiodo, A. Molinaro, A. Silipo, Y. EM van der Burgt, B. Yu, P.H. Seeberger, M. Wührer. 2021, Analytical Chemistry, 93, 4666-4675.
34. Emerging glyco-based strategies to steer immune responses. M. Anderluh, F. Berti, A. Bzducha-Wrobel, F. Chiodo, C. Colombo, F. Compostella, K. Durlik, X. Ferhati, R. Holmdahl, D. Jovanovic, W. Kaca, L. Lay, M. Marinovic-Cincovic, M. Marradi, M. Ozil, L. Polito, J. Juan Reina-Martin, C. A Reis, R. Sackstein, A. Silipo, U. Svajger, O. Vanek, F. Yamamoto, B. Richichi, S. J van Vliet. 2021, The FEBS Journal, 288, 4746-4772.
33. G. Biagiotti, E. Puric, I. Urbancic, A. Kriselj, M. Weiss, J. Mravljak, C. Gellini, L. Lay, F. Chiodo, M. Anderluh, S. Cicchi, B. Richichi. Combining cross-coupling reaction and Knoevenagel condensation in the synthesis of glyco-BODIPY probes for DC-SIGN super-resolution bioimaging. 2021, Bioorganic Chemistry 109, 104730.
32. W. Doelman, MHS Marqvorsen, F. Chiodo, SCM Bruijns, GA van der Marel, Y. van Kooyk, SI van Kasteren, C. Araman. Synthesis of asparagine derivatives harboring a Lewis X type DC-SIGN ligand and evaluation of their impact on immunomodulation in multiple sclerosis. 2021, Chemistry 27, 2742.
31. N. Reintjens, E. Tondini, AR de Jong, NJ Meeuwenoord, F. Chiodo, E. Peterse, HS Overkleef, DV Filippov, GA van der Marel, F. Ossendorp, JDC Codee. 2020, Journal of Medicinal Chemistry, 63, 20, 11691-11706.
30. P. Garcia-Vello, I. Speciale, F. Chiodo, A. Molinaro, C. De Castro. Carbohydrate-based adjuvants. 2020, Drug Discovery Today: Technologies, Elsevier.
29. Q. Zhu, Z. Shen, F. Chiodo, S. Nicolardi, A. Molinaro, A. Silipo, B. Yu. Chemical synthesis of glycans up to a 128-mer relevant to the O-antigen of *Bacteroides vulgatus*. 2020, Nature Communications, 11, 4142 (Selected by the Editors as particularly important in the area of organicchemistry and chemical biology)
28. F. Di Lorenzo, M. Pither, M. Martufi, I. Scarinci, J. Guzman Caldentey, E. Lakomiec, W. Jachymek, S. Bruijns, S. Martin-Santamaria, JS Frick, Y. Van Kooyk, F. Chiodo, A. Silipo, ML Bernardini, A. Molinaro. Pairing *Bacteroides vulgatus* mpk endotoxin unique structure with its equally unique immunological behavior. 2020, ACS Central Science, <https://doi.org/10.1021/acscentsci.0c00791>
27. F. Chiodo*, S. Bruijns, E. Rodriguez, E. Li, A. Molinaro, A. Silipo, F. Di Lorenzo, D. Garcia-Rivera, Y. Valdes-Balbin, V. Verez-Bencomo, Y. van Kooyk. Novel ACE2-Independent Carbohydrate-Binding of SARS-CoV-2 Spike Protein to Host Lectins and Lung Microbiota. 2020, bioRxiv 2020.05.13.092478 *Corresponding author
26. Forgone RE, Di Carluccio C, Guzman-Caldentey J, Gaglione R, Battista F, Chiodo F, Manabe Y, Arciello A, Del Vecchio P, Fukase K, Molinaro A, Martin-Santamaria S, Crocker PR, Marchetti R, Silipo A. Unveiling Molecular Recognition of Sialoglycans by Human Siglec-10. 2020, iScience, 23, 6, 101231.
25. S. Duinkerken, E. Li, F. van Haften, T. de Gruijl, F. Chiodo, S. Schettters, Y. van Kooyk. Chemically engineered glycan-modified cancer vaccines to mobilize skin dendritic cells. 2019, Current Opinion in Chemical Biology, 53, 167-172.
24. Y. Manabe, R. Marchetti, Y. Takakura, M. Nagasaki, W. Nihei, T. Takebe, K. Tanaka, K. Kabayama, F. Chiodo, S. Hanashima, Y. Kamada, E. Miyoshi, H. P. Dulal, Y. Yamaguchi, Y. Adachi, N. Ohno, H. Tanaka, A. Silipo, K. Fukase, A. Molinaro. The core fucose on an IgG antibody is an endogenous ligand of Dectin-1. 2019, Angewandte Chemie International Edition, 58, 18697-18702.
23. X. Wang, H. Chen, F. Chiodo*, B. Tefsen. Detection of human IgM and IgG antibodies by means of galactofuranose-coated and rhamnose-coated gold nanoparticles. 2019, Matters (ISSN:2297-8240), doi: 10.19185/matters.201908000004. *Corresponding author
22. Q. Zhang, A. Gimeno, D. Santana, Z. Wang, Y. Valdes-Balbin, L. Rodriguez-Noda, T. Hansen, L. Kong, M. Shen, H. Overkleef, V. Verez-Bencomo, G. van der Marel, J. Jimenez-Barbero, F. Chiodo, J. Codee. Synthetic, zwitterionic Sp1-oligosaccharides adopt a helical structure crucial for antibody interaction. 2019, ACS Central Science, 5, 1407-1416.

21. R. Gracia, M. Marradi, G. Salerno, R. Perez-Nicado, A. Perez-San Vicente, D. Dupin, J. Rodriguez, I. Loinaz, F. Chiodo*, C. Nativi. Biocompatible single-chain polymer nanoparticles loaded with an antigen mimetic enhance specific innate immune response. 2018, ACS Macro Letters, 7, 196-200. *Corresponding author.
20. N. Climent, I. Garcia, M. Marradi, F. Chiodo, L. Miralles, M. J. Maleno, J. M. Gatell, F. Garcia, S. Penades, M. Plana. Loading Dendritic Cells with Gold Nanoparticles (GNPs) Bearing HIV-Peptides and Mannosides Enhance HIV-Specific T Cell Responses. 2018, Nanomedicine: Nanotechnology, Biology, and Medicine, 14, 339-351.
19. S. Nicolardi, Y. van der Burgt, M. Wuhrer, J. Codee, C. H. Hokke, F. Chiodo*. Structural characterization of bio-functionalized gold nanoparticles by ultrahigh resolution mass spectrometry. 2017, ACS Nano, 11, 8257-8264. *Corresponding author.
18. G. Gential, N. Ho, F. Chiodo, N. Meeuwenoord, F. Ossendorp, H. Overkleeft, G. van der Marel, D. Filippov. Synthesis and evaluation of fluorescent Pam3Cys peptide conjugates. 2016, Bioorganic & Medicinal Chemistry Letters, 26, 3641-3645.
17. F. Chiodo, Carbohydrate and Immunology on the Way to Modern Glycoscience. What can we learn from the past? 2015, Glycopedia E-Chapter, collaboration with S. Perez.
16. M. Marradi, F. Chiodo, I. Garcia, S. Penades. Glyconanotechnology and Disease: Gold Nanoparticles Coated with Glycosides as Multivalent Systems for Potential Applications in Diagnostics and Therapy, Chapter-5, 89-131. 2015, Carbohydrates in Drug Design and Discovery, Edited by J. Jimenez-Barbero. RSC eBook Collection.
15. F. Chiodo*, M. Marradi. Gold nanoparticles as carriers for synthetic glycoconjugate vaccines. 2015, Methods in Molecular Biology, 1331, 159-171. *Corresponding author
14. F. Chiodo, P. M. Enriquez-Navas, J. Angulo, M. Marradi, S. Penades. Assembling different antennas of the gp120 high mannose-type glycans on gold nanoparticles provides superior binding to the anti-HIV antibody 2G12 than the individual antennas. 2015, Carbohydrate Research, 405, 102-09.
13. D. Arosio, F. Chiodo*, J. J. Reina, M. Marelli, S. Penades, Y van Kooyk, J. J. Garcia-Vallejo, A. Bernardi. Effective targeting of DC-SIGN by -fucosyl-amide functionalized gold nanoparticles. 2014, Bioconjugate Chemistry, 25, 2244-2251. *Corresponding author.
12. F. Chiodo*, M. Marradi, J. Calvo, E. Yuste, S. Penades. Glycosystems in nanotechnology: Gold glyconanoparticles as carrier for anti-HIV prodrugs. 2014, Beilstein Journal of Organic Chemistry, 10, 1339-1346. *Corresponding author.
11. R. Murray, Y. Qiu, F. Chiodo, M. Marradi, S. Penades, S. E. Moya. A Quantitative Study of Intracellular Dynamics of Fluorescently Labelled Gold Nanoparticles via Fluorescence Correlation Spectroscopy. 2014, Small, 10, 2602-2610.
10. F. Chiodo*, M. Marradi, J. Park, A. F. J. Ram, S. Penades, I. van Die, B. Tefsen. Galactofuranose-Coated Gold Nanoparticles Elicit a Pro-inflammatory Response in Human Monocyte-Derived Dendritic Cells and Are Recognized by DC-SIGN. 2014, ACS Chemical Biology, 9, 383-389. Highlighted on a Special ACS issue on Bioconjugates for Chemical Biology, June 2016. *Corresponding author
9. F. Chiodo*, M. Marradi, B. Tefsen, H. Snippe, I. van Die, S. Penades. High Sensitive Detection of Carbohydrate Binding Proteins on an ELISA-Solid Phase Assay based on Multivalent Glyconanoparticles. 2013, PLoS ONE, 8, e73027. *Corresponding author.
8. H. Kalay, M. Ambrosini, F. Chiodo, Y. van Kooyk, J. J. Garcia-Vallejo. Enhanced glycan nanoprofiling by weak anion exchange preparative chromatography, mild acid desialylation, and nanoliquid chromatography-mass spectrometry with nanofluorescence detection. 2013, Electrophoresis, 34, 2350-2356.
7. M. Marradi, F. Chiodo, I. Garcia, S. Penades. Glyconanoparticles as multifunctional and multimodal carbohydrate systems. 2013, Chemical Society Reviews, 42, 4728-4745.
6. J. J. Garcia-Vallejo, M. Ambrosini, A. Overbeek, H. van Riel, K. Bloem, W. W. J. Unger, F. Chiodo, J. G. Bolscher, K. Nazmi, H. Kalay, Y. van Kooyk. Multivalent glycopeptide dendrimers for the targeted delivery of antigens to dendritic cells. 2013, Molecular Immunology, 53, 387-397.
5. P. M. Enriquez-Navas*, F. Chiodo*, M. Marradi, J. Angulo, S. Penades. STD NMR Study of the Interaction between Antibody 2G12 and Synthetic Oligomannosides That Mimic Selected Branches of gp120 Glycans. 2012, ChemBioChem, 13, 1357-1365. *Authors contributed equally to this work.
4. P. Di Gianvincenzo, F. Chiodo, M. Marradi, S. Penades. Gold manno-Glyconanoparticles for Intervening in HIV gp120 Carbohydrate-Mediated Processes. 2012, Methods in Enzymology, 509, 21-40.
3. D. Safari, M. Marradi, F. Chiodo, H. A. Th. Dekker, Y. Shan, R. Adamo, S. Oscarson, G. Rijkers, M. Lahmann, J. P. Kamerling, H. Snippe, S. Penades. Gold nanoparticles as carriers for a synthetic *S. pneumoniae* type 14 conjugate vaccine. 2012, Nanomedicine UK, 7, 5, 651-662.
2. M. Marradi, P. Di Gianvincenzo, P. M. Enriquez-Navas, O. M. Martinez-Avila, F. Chiodo, E. Yuste, J. Angulo, S. Penades. 2011, Gold Nanoparticles Coated with High Mannose-Type Oligosaccharides Bind the HIV-1 Broadly Neutralizing Antibody 2G12 and Inhibit its Interaction with the Viral Envelope Glycoprotein gp120 and with the Virus. 2011, Journal of Molecular Biology, 410, 5, 798-810.
1. M. Marradi, F. Chiodo, I. Garcia, S. Penades. Glycoliposomes and metallic glyconanoparticles in glycoscience, chapter 10. 2011, Synthesis and biological applications of glycoconjugates, Edited by O. Renaudet; Co-Edited by N. Spinelli, Bentham eBooks, ISBN: 978-1-60805-277-6.

Projects

- 2023: Principal Investigator (PI), PRIN PNRR 2022, Project: Gut microbiota and vaccines immunogenicity: the role of bacterial glycans to develop new adjuvants and immune-modulators. Disciplinary sector/area of interest: LS6
- 2023: co-Principal Investigator (capo unita' CNR), PRIN 2022, Project: Unveiling and exploiting the Chemical features of Lipopolysaccharides (LPS) from gut microbiota to solve Food Allergy. Disciplinary sector/area of interest: PE5
- 2022: Partner of the PNRR Project "One Health Basic and Translational Research Actions addressing Unmet Needs on Emerging Infectious Diseases INFACIT" CUP B53C20040570005
- 2021: Partner EU-ITN network Glytunes
- 2018: Amsterdam Infection and Immunity Institute, Individual Grant
- 2017, 2016 and 2015: Erasmus+ KA107 (Mobility between partner countries in the field of higher education): for students and staff exchange Havana University/Leiden University and vice versa. Project coordinator
- 2016: National Natural Science Foundation of China (NSFC)/Joint Research Scheme

2016, 1st Co-applicant. Collaboration with Dr. B. Tefsen, Xi'an Jiaotong-Liverpool University, Suzhou, China.

2014: NWO (Netherlands Organization for Scientific Research) Chemische Wetenschappen (Chemical Sciences): Individual VENI grant for starting independent research.

2014: NWO-WOTRO Science for Global Development: PhD student training period from Cuba to Leiden. Project coordinator

2012: Prize for one of the best Oral Communication in the 26th International Carbohydrate Symposium (ICS 2012), Madrid, 22-27 July 2012.

2011: National Spanish grant for short-stay abroad (FPI-MICINN)

2009: Spanish PhD fellowship, Beca FPI-MICINN, BES-2009-025533

Memberships Editorial Boards Research Topic at Frontiers in Immunology: The Role of Glycans in Infectious Disease

Editorial Board Frontiers in Microbiology

Associate Editor Frontiers in Microbiology

Cuban State Honor Carlos J. Finlay for the Scientific Contribution in the development of different SARS-CoV-2 vaccines

2015: Extraordinary Award for PhD Thesis defended in 2013 from University of Basque Country (top 10% 2012/2013).

20 Invited Talks at different Universities and Research Institutes Worldwide

Scientific Dissemination in Schools and Public Events

8 Invited talks to International Conferences

16 Oral contributions to International Conferences

Other Relevant Information 130h of teaching at different Universities

Referee for the following International peer-reviewed journals: ACS Infectious Diseases, ACS Nano, Advanced Biosystems (Wiley), Analyst, Biochemical Society Transactions, Bioorganic Chemistry, BMC Infectious Diseases, Carbohydrate Polymers, ChemBioChem, Chemical Reviews, Colloids and Surfaces B: Biointerfaces, Current Topics in Medicinal Chemistry, Drug Discovery Today: Technologies, Frontiers in Immunology, Frontiers in Microbiology, Glycoconjugate Journal, iScience, JACS Au, Journal of Pharmaceutical and Biomedical Analysis, Molecular Pharmaceutics, Molecules, Pure and Applied Chemistry, RSC Chemical Biology, Nanomedicine UK, Nanoscale, Theranostics, Vaccine.

Referee for the following National grants application: Agence Nationale de la Recherche (ANR) Biomedical Innovation 2016, Czech Science Foundation 2020, National Science Centre Poland 2021 and 2022.

Scientific Committee Member of the following Conferences: 27th Joint Glycobiology meeting, Nijmegen 16-18.11.2016; 6th Latin American Glycobiology Congress, 2021.

Co-director and direct supervision of 5 PhD students; Director and direct supervision of 2 BSc students and 3 MSc students; Direct supervision of 3 PhD students from personal projects/grants and collaborations. Supervision of 3 PhD students from other collaborations (Department MCBI Amsterdam).

PhD committee Member of Massey University (New Zealand), Lisbon Faculty of Medicine, University of Milan and Leiden University.

Science Communication Manager and Management Committee Member (National representative) of the COST action 18103, INNOGLY, Innovation with Glycans

2024 Oxford University (The Jenner Institute) Course in Clinical Vaccine Development and Biomanufacturing