

Prof. Dr. Marcelo Calderón

Assistant Professor in Organic and Macromolecular Chemistry

Born April 17, 1979 in San Luis, Argentina

Nationality: Argentinean/German

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CURRENT POSITION

1. **05.2013-04.2019. Assistant Professor for Organic and Macromolecular Chemistry.** Department of Chemistry, Freie Universität Berlin, Germany. *Multifunctional polymers for biomedical applications.*
2. **12.2012-11.2018. BMBF NanoMatFutur Group Leader.** In the frame of the program 'Werkstoffinnovationen für Industrie und Gesellschaft – WING'. *ThermoNanogele: Neuartige thermoresponsive Nanogele für den zielgerichteten Wirkstofftransport und die kontrollierte Freisetzung von Zytostatika und/oder fluoreszierenden Substanzen.*
3. **10.2013-06.2017. Project Leader at the Collaborative Research Center 1112 'Nanocarriers: Architecture, Transport, and Topical Application of Drugs for Therapeutic Use'.** *Development of pH-cleavable and thermoresponsive nanogels as nanocarriers for the transdermal triggered release of drugs.*
4. **12.2013-05.2017. Project Leader at the Helmholtz Virtual Institute 'Multifunctional Materials for Medicine'.** *Influence of the protein adsorption on thermoresponsive polyether-based nanogel properties.*

PROFESSIONAL EXPERIENCE AND EDUCATIONAL BACKGROUND

1. **Since 2013. Assistant Professor:** Department of Chemistry, Freie Universität Berlin, Germany. *Multifunctional polymers for biomedical applications.*
2. **2010-2013. Junior Group Leader.** Department of Chemistry, Freie Universität Berlin, Germany (Research advisor: Prof. Dr. Rainer Haag). *Development of smart nanocarrier systems for biomedical applications.*
3. **2007-2010. Post-Doctoral Fellow.** Department of Chemistry, Freie Universität Berlin, Germany (Research advisor: Prof. Dr. Rainer Haag). *Cleavable nanoparticles as intelligent transport system for biomedical application. From laboratory to clinic.*
4. **2003-2007. Doctoral Student.** Department of Organic Chemistry, Faculty of Chemical Sciences. National University of Cordoba, Argentina (research advisor: Prof. Dr. Miriam Strumia). *Synthesis and characterization of amphiphilic polymers by dendronization.*
5. **1997-2003. Bachelor in Chemistry Student.** Department of Organic Chemistry, Faculty of Chemical Sciences. National University of Cordoba, Argentina (research advisor: Prof. Dr. Miriam Strumia). *Synthesis, characterization and studies of matrices to applied in the construction of biosensor*

AWARDS AND HONORS

1. **2017.** Emerging Investigator (Journal of Material Chemistry B, Royal Society of Chemistry).
2. **2015.** Emerging Investigator (Chemical Communications, Royal Society of Chemistry).
3. **2011.** Cesar Milstein Fellowship (MINCyT, Argentina).

4. **2010-2016.** Junior Group Leader funding from the “Nanoskalige Funktionsmaterialien (NanoScale)”, Freie Universität Berlin, Berlin.
5. **2010.** Arthur K. Doolittle Award (American Chemical Society, PMSE Division).
6. **2003-2008.** Doctoral Fellowship, Research Council of Argentina (CONICET).
7. **1998-2003.** Predoctoral Fellowship, YPF Foundation, Argentina.

REFEREEING AND EDITORIAL ACTIVITIES

1. Member of editorial board of the Journal of Nanopharmaceutics & Drug Delivery.
2. Peer reviewer of the following journals: Advanced Materials, Angewandte Chemie, Biomacromolecules, Bioorganic and Medicinal Chemistry, Chemical Society Reviews, Current Opinion on Biotechnology, Journal of Biomedical Nanotechnology, Journal of Material Chemistry B, Langmuir, Macromolecular Chemistry and Physics, Nanomedicine, New Journal of Chemistry, Tetrahedron, Acta Biomaterialia, Biomaterials, Chemical Communications, Colloidal and Interface Science, Journal of Luminescence, Macromolecular Rapid Communications, Macromolecular Bioscience, Molecular Pharmaceutics, Nanoscale, Progress in Polymer Science, ACS Applied Materials and Interfaces, Bilstein, RSC Biomaterial Science.
3. Guest editor of Royal Society of Chemistry - Nanoscale (2014). *Dendritic polymers for smart drug delivery applications*
4. Guest editor of Journal of Biomedical Nanotechnology (2014). *A special issue on polymer conjugate based nanotherapeutics*
5. Guest editor of Biotechnology Advances (2015). *Polymeric soft nanocarriers as smart drug delivery systems: State-of-the-art and future perspectives*
6. Evaluation of projects of the: Comisión Nacional de Investigación Científica y Tecnológica – CONYICIT, Chile; Consejo Nacional de Investigaciones Científicas y Técnicas, CONICET, Argentina; Royal Society Newton Advanced Fellowship, England; European Science Foundation; Deutsche Forschungsgemeinschaft (DFG), Germany; Bundesministerium für Bildung und Forschung (BMBF), Germany; Alexander von Humboldt Foundation, Germany.

SUCCESSFUL FUNDING APPLICATIONS

Since 2010 ten funded projects evolved from the group. Total amount of acquired funding corresponds to 3,273,764 €

1. **12.2012–11.2018. NanoMatFutur Grant from the Bundesministerium für Bildung und Forschung (BMBF)** – ‘ThermoNanogele: Neuartige thermoresponsive Nanogele für den zielgerichteten Wirkstofftransport und die kontrollierte Freisetzung von Zytostatika und/oder fluoreszierenden Substanzen.’ Amount: 2.634.137 € (+ 20% overheads).
2. **09.2016-11.2018. Einstein Foundation** - Magnetoplasmonic-Thermoresponsive Nanogel: A Smarter Theranostic Device. Amount: 197.118 €
3. **10.2013–06.2017. Deutsche Forschungsgemeinschaft (DFG)** Collaborative Research Center 1112 - Nanocarriers: Architecture, Transport, and Topical Application of Drugs for Therapeutic Use. Working Group: ‘Development of pH-cleavable and thermoresponsive nanogels as nanocarriers for the transdermal triggered release of drugs.’ Amount: 224.160 € (+ 20% overheads).
4. **11.2013–10.2016. Helmholtz Virtual Institute** ‘Multifunctional Materials for Medicine’ – ‘Influence of the protein adsorption on thermoresponsive polyether-based nanogel properties.’ Amount: 75.000 €
5. **10.2010–09.2011. Freie Universität Berlin, Focus Area NanoScale** – ‘Targeting of intracellular organelles mediated by dendritic polyglycerols.’ Amount: 30.000 €
6. **01.2012–12.2012. Freie Universität Berlin, Focus Area NanoScale** – ‘Intracellular release kinetics and localization from macromolecular prodrugs.’ Amount: 30.000 €

7. **05.2012-30.04.2014. Bundesministerium für Bildung und Forschung (BMBF)-project** (2012000247), Collaboration with Rainer Haag (Freie Universität Berlin) and with Universidad Nacional Cordoba, Argentina. Design of novel nanocarrier architectures for biomedical application. Sum: 27.024 € (+ 20% overheads).
8. **01.2014–12.2014. Freie Universität Berlin, Focus Area NanoScale** – ‘Development of dendronized interpenetrating polymer networks for biomedical applications.’ Amount: 30.000 €
9. **03.2014–02.2015. Deutsche Forschungsgemeinschaft (DFG) Grant to Support the Initiation of International Collaboration (MINCyT Argentina).** ‘Development of environmentally-sensitive polymer nanoparticles.’ Amount: 11.325 € (+ 20% overheads).
10. **03.2015–02.2016. Freie Universität Berlin, Focus Area NanoScale** – ‘Design and synthesis of novel multifunctional mucoadhesive and mucopenetrating nanocarriers for the targeted delivery of microbicides in vaginal epithelium’ Amount: 15.000 €

SUCCESSFUL FELLOWSHIP APPLICATIONS

1. **08.2012-07.2014. Marie Curie Postdoctoral Fellowship.** Dr. Ana Sousa-Herves. Co-supervised with Prof. Rainer Haag. ‘Environmental-responsive nanogels for biomedical applications’.
2. **07.2013-09.2015. Georg Forster Research Fellowship for Postdoctoral Researchers,** Alexander von Humboldt-Foundation. Dr. Maria Molina. Co-supervised with Prof. Rainer Haag. ‘Development of nanogels for controlled drug delivery driven by near infrared light’.
3. **09.2013-02.2014. German Academic Exchange Service (DAAD) Fellowship for Visiting Doctoral Student.** Dr. Alberto Sanz de León. ‘Biofunctional platforms fabricated by nanogels immobilization onto honeycomb structured films’.
4. **10.2014-09.2016. Dahlem International Network Postdocs Fellow.** Dr. Julian Bergueiro. ‘Gold Nanorod@Elastine Hybrid Thermoresponsive Nanogels for Combined Hyperthermia and Chemotherapy’.
5. **02.2014. Connect Programm Alexander von Humboldt.** Prof. Amedea Seabra. ‘Development of NO release polymeric materials’.
6. **10.2014. Connect Programm Alexander von Humboldt.** Jr.-Prof. Marcelo Calderón. ‘Development of NO release polymeric materials’.
7. **02.2014-04.2014. Alumni Program Freie Universität Berlin.** M.Sc. Khushbu R. Zope, ‘Design and Evaluation of Nanogel-Transferrin-Iron Oxide for Targeting, Isolation, and Detection of Circulating Tumor Cells’.
8. **04.2015-06.2015. German Academic Exchange Service (DAAD) Fellowship for Visiting Doctoral Student.** Lic. Catalina Biglioni. ‘Synthesis of magnetic thermoresponsive nanogels using ultrasonication for biomedical applications’.
9. **06.2015-10.2015. Collaborative Research Center (SFB1112) Fellowship for International Students.** Lic. Catalina Biglioni. ‘Synthesis and characterization of oligoethylene glycol based nanogels’.
10. **10.2015-12.2015. German-Russian Interdisciplinary Science Center (G-RISC) Scholarship.** B.Sc. Alisa Nevskaja. ‘Macromolecular prodrug approach to improve the efficacy of chromenoimidazoisoquinoline moiety via conjugation to dendritic polymers’.
11. **01.2016-03.2016. Alumni Program Freie Universität Berlin.** M.Sc. Govind Pandurang Chate. ‘Design, evaluation of cytotoxicity and cellular interactions of hyperbranched polymer (HBP)-PDMS-carbon soot engineered superhydrophobic surfaces (SHS)’.
12. **03.2016-02.2017. German Academic Exchange Service (DAAD) Fellowship for Visiting Doctoral Student.** M.Sc. Marcelo Kravicz. ‘Poly(succinimide)-graft-poly(glycerol)amines (PSI-g-PG-NH₂) hyperbranched structures and its polyplexes with siRNA: physicochemical and biological evaluation’
13. **03.2016-02.2017. Collaborative Research Center (SFB1112) Fellowship for International Students.** Dr. Lydia Bouchet. ‘Tacrolimus and Dexamethasone Covalent Dual Labelling for Skin Internalization Tracking with FLIM and EPR’.

14. **03.2016-09.2016. German Academic Exchange Service (DAAD) Fellowship for Visiting Doctoral Student.** Lic. Ana Sofia Sonzogni. 'Transdermal vaccination against Chagas disease'.
15. **05.2016-08.2016. German Academic Exchange Service (DAAD) Fellowship for Visiting Doctoral Student.** Lic. Cecilia Samaniego Lopez. 'Synthesis of dendritic receptors for carbohydrates performing recognition at the physiological level'.
16. **10.2016-03.2017. Erasmus Plus Program.** M.Sc. Amit Kumar. 'Covalent dual labelling of responsive polymers for skin internalization tracking with FLIM and EPR'.
17. **10.2016-03.2017. Erasmus Program.** B.Sc. Eva Clemente. 'Semi-interpenetrating nanogels as cell glue'.

INSTRUMENTATION

1. **Since 03.2013. ÄKTaprime™ plus.** Compact chromatography system designed for one-step purification of proteins at laboratory scale. The following functions are built-in: gradient pump, motorized 8-port buffer selection valve, motorized injection valve, monitor, UV/conductivity detector, fraction collector, and a series of columns for nanogels purification. Total investment approximately 25,000 €.
2. **Since 10.2013. Tecan InfiniteM200 Pro microplate reader** equipped with a gas control module. Suitable for characterization of cellular events based on fluorescence detection on 96-well plates. Details: absorption (230 nm – 1000 nm), fluorescent intensity with top and bottom reading – (FRET und TRF: 230 nm – 850 nm), automatic focus and fluorescent measurement, able to measure lumineszenz (Flash-, Glow-, Dual Color - BRET), single photon counting detector, temperature control. Total investment approximately 40,000 €.
3. **Since 04.2013. Nanoparticle Tracking Analysis (NTA) Malvern.** Coupled to modules for temperature control, dynamic light scattering measuring, and surface charge determination. Total investment approximately 100,000 €.
4. **Since 10.2016. HPLC-GPC LC-2030 integrated Shimadzu system.** Fully automatic system, provided with IR and RI detector, and columns for MW determination of small polymers and nanogels. Total investment approximately 50,000 €.

INTERNATIONAL SCIENTIFIC RESEARCH VISITS

1. **07-09/2004, Chile.** Physico-chemical Research Group. Pontifical Catholic University of Chile, Santiago. *Dendronization and characterization of poly(monomethyl itaconate).*
2. **03-07/2006, Germany.** Department of Chemistry, Freie Universität Berlin, Berlin. *Synthesis and characterization of amphiphilic polymers.*
3. **01/2008, Germany.** Macromolecular Prodrugs Research Group. Tumor Biology Center, Freiburg. *Synthesis and characterization of polyglycerol-prodrugs conjugates.*
4. **01-02/2010, United Kingdom.** Department of Chemistry, University of York. *Development of amphiphilic dendritic systems with potential application in gene delivery.*
5. **11/2010, India.** Department of Chemistry, University of New Delhi, New Delhi. *Development of amphiphilic dendritic systems for drug delivery applications.*
6. **11-12/2011, 11/2012, 09-10/2013, 03/2014, 03/2015, and 09/2016, Argentina.** Department of Organic Chemistry, University of Córdoba. *Functional nanogels for biomedical applications.*
7. **11/2013, Costa Rica.** Department of Polymer Science PoliUNA, National University of Heredia. *Multifunctional polymers for nanomedicine.*
8. **10/2014, Brazil.** Universidade Federal de São Paulo, Santo Andre. *Development of nitric oxide (NO)-releasing PEGylated nanoparticles.*
9. **05/2014, Spain.** Instituto de Ciencia y Tecnología de Polímeros (ICTP-CSIC), Madrid. *Biofunctional platforms fabricated by nanogels immobilization onto honeycomb structured films.*
10. **10/2015, Israel.** Technion – Israel Institute of Technology, Haifa. *Nanogels for mucosal drug delivery.*

11. **10/2015, Israel.** Tel Aviv University, Tel Aviv. *Dendritic polymers therapeutics.*
12. **06/2015, Spain.** Instituto Investigaciones Químicas (IIQ), CSIC, Sevilla. Nanogels for antiviral applications
13. **06/2015, Spain.** Departamento de Ciencias Biomédicas, Universidad de León, León. *New approaches from nanomedicine for treating leishmaniasis*
14. **11/2015, India.** Maharashtra Institute of Pharmacy, Pune. *Nanogels as Magnetic Trap Devices for Circulating Tumor Cells.*
15. **06/2016, Japan.** School of Engineering, The University of Tokyo, Tokyo. *Gold Nanorod@Elastine hybrid thermoresponsive nanogels for combined hyperthermia and chemotherapy.*
16. **07/2016, Cuba.** Department of Chemistry, University of Habana, Habana. *Development of Polymeric Materials for Theranostics.*

TEACHING EXPERIENCE

1. **Since 2011. Lecturer.** Freie Universität Berlin, Berlin, Germany. *Polymer therapeutics, Chemical nanotechnology, Polymeric and inorganic bio(nano)materials for biomedical applications, Polymer science, Soft Matter.*
2. **2013. Lecturer at graduate course.** National University - Heredia, Costa Rica. *New paradigms in biomedical application of multifunctional polymeric materials.*
3. **2014. Lecturer at graduate course.** Universidade Federal de São Paulo, Diadema, Brazil. *Polymer therapeutics.*
4. **2011. Organizer and Lecturer of graduate course.** National University of Cordoba, Argentina. *New paradigms in biomedical application of polymers*
5. **2006. Teaching Assistant of graduate course.** National University of Rio IV. Argentina. *Biopolymers. Application of nanostructures in the controlled drug distribution. Synthesis, characterization and biocompatibility of dendrimers*
6. **2004-2007. Teaching Assistant.** National University of Cordoba. Argentina. *Laboratory of natural and synthetic macromolecules*
7. **2003. Teaching Assistant.** National University of Cordoba. Argentina. *Laboratory of general chemistry and physics II*
8. **2000-2007. Teaching Assistant.** National University of Cordoba. Argentina. *Introduction to the study of chemical sciences*
9. **1999-2002. Student Teaching Assistant.** National University of Cordoba. Argentina. *Mathematics I-II, Introduction to laboratory I-IV*

MENTORING ACTIVITIES

Bachelor Thesis

1. **07.2008-09.2008.** Harald Rune Krüger. Development of a star-polymer prodrug conjugates
2. **12.2008-02.2009.** Alexander Philipp Battig. Synthesis of pH-cleavable doxorubicin conjugates with dendritic polyglycerols
3. **02.2009-04.2009.** Mazdak Asadian-Birjand. Developments of polyglycerol scaffold for drug conjugation
4. **08.2009-10.2009.** Martha Kozakowski. Developments of polyglycerol scaffold for drug conjugation
5. **02.2010-05.2010.** Christoph Hahn. Synthesis of polyglycerol derivatives for delivery of bioactive compounds.
6. **03.2012-06.2012.** Gregor Nagel. Synthesis of Acid-labile FRET-based Imaging Systems
7. **11.2013-01.2014.** Marc Nicola Röger. Preparation of Polyglutamic Acid Nanogels.

Master Thesis

1. **08.2010-03.2011.** Ariane Tschiche. Dendritic Glycerol-Based Amphiphiles for Non-Viral Gene Delivery.
2. **07.2010-02.2011.** Harald Rune Krüger. Biocompatible FRET-based Imaging Systems.
3. **10.2010-06.2011.** Mazdak Asadian-Birjand. Synthesis of Thermo-responsive Nanogel Systems Based on Hyperbranched Polyglycerol.
4. **02.2013-08.2013.** Michael Giulbudagian. Glycerol Based Thermo-Responsive Nanogels.
5. **10.2014-04.2015.** Loryn Fechner. Development of Functionalized Thermoresponsive Nanogels for Targeted Delivery and NIR Triggered Release of Anticancer Drugs.
6. **10.2014-05.2015.** Emanuel A. Glitscher. Synthesis of Thermoresponsive Nanogels Cross-Linked by Gold Nanoparticles.
7. **11.2015-05.2016.** Dogus Isik. Cyclodextrin based Plasmonic Nanogels.
8. **07.2016-09.2016.** Christian Neumann. Synthesis of gold nanoparticle and polyglycerol hybrid nanogels based on host-guest interactions.
9. **06.2016-12.2016.** Ernesto Osorio-Blanco. Synthesis of Thermoresponsive Nanocapsules.

Doctoral Thesis

1. **05.2011-02.2015.** Harald Rune Krüger. Polyglycerol-based conjugates for theranostic applications.
2. **07.2011-09.2015.** Mazdak Asadian-Birjand. Stimuli-responsive Nanogels for Dermatology, Photothermal Therapy, and Detection of Circulating Tumor Cells.
3. **05.2010-05.2015.** Fatemeh Sheikhi Mehrabadi. Dendritic Polyglycerol for Efficient Drug/siRNA Delivery. (Co-supervision with Prof. Rainer Haag)
4. **Since 10.2013.** Michael Giulbudagian. Thermoresponsive Nanogels for Topical Drug Delivery.
5. **Since 01.2014.** Enrico Miceli. Influence of the protein adsorption on thermoresponsive polyether-based nanogel properties.
6. **Since 03.2014.** Laura I. Vossen. Dendritic Polymers for Combination Therapy.
7. **Since 02.2015.** Gregor Nagel. Degradable Nanogels for Theranostic Applications.
8. **Since 07.2015.** Loryn Fechner. Functional Thermo- and Near Infrared Irradiation-Responsive Nanogels for Combinational Cancer Therapy
9. **Since 08.2015.** Emanuel A. Glitscher. Thermoresponsive Nanogels Cross-Linked by Metal-based Nanoparticles.
10. **Since 01.2017.** Ernesto Osorio-Blanco. Synthesis of Thermoresponsive Nanocapsules for Biomedical Applications.

Advanced Laboratory Practice

1. **2008-02.2009.** Fatemeh Sheikhi Mehrabadi. The survey of DNA binding affinity of dendritic polyamines.
2. **08.2009-09.2009.** Harald Krüger. Development of Multicomponent Polymer Drug Conjugates.
3. **03.2010-05.2010.** Mazdak Asadian-Birjand. Synthesis of polyglycerol scaffolds for early diagnosis and treatment of cancer.
4. **02.2010-06.2010.** Ariane Tschiche. Dendritic Polyamines for Gene Delivery.
5. **05.2013-07.2013.** Gregor Nagel. Development of Smart Imaging Systems.
6. **09.2013-11.2013.** Dimitri van den Wittenboer. Multiresponsive Nanogels for Controlled Drug Delivery.
7. **08.2013-02.2014.** Victor Gutierrez. Approaches from Nanomedicine for the Treatment of Leishmaniasis.
8. **07.2014-08.2014.** Emanuel Glitscher. Synthesis of Thermo-Responsive Gold-Based Nanogels.
9. **01.2014-03.2014.** Liroy Lugasi. Design of Semi-Interpenetrated Nanogels.
10. **03.2014-05.2014.** Florian Noack. Development of Multiresponsive Nanogels.
11. **07.2014-09.2014.** Alexander Oehrl. Synthesis of Nanogels by Thermananoprecipitation.
12. **02.2015-08.2015.** Dr. Fitsum Sahle. Development of Thermoresponsive Nanogels for Hair Follicle Penetration.

13. **07.2015-09.2015.** Dogus Isik. Synthesis and Characterization of Cyclodextrin Modified Thermoresponsive Nanogels.
14. **02.2016-05.2016.** Ernesto Osorio-Blanco. Protein adsorption on thermoresponsive polyether-based Nanogels

Postdoctoral Research Project

1. **08.2012-07.2014. Marie Curie Postdoctoral Fellowship.** Dr. Ana Sousa-Herves. Co-supervised with Prof. Rainer Haag. 'Environmental-responsive nanogels for biomedical applications'.
2. **07.2013-09.2015. Georg Forster Research Fellowship for Postdoctoral Researchers,** Alexander von Humboldt-Foundation. Dr. Maria Molina. Co-supervised with Prof. Rainer Haag. 'Development of nanogels for controlled drug delivery driven by near infrared light'.
3. **10.2014-09.2016. Dahlem International Network Postdocs Fellow.** Dr. Julian Bergueiro. 'Gold Nanorod@Elastine Hybrid Thermoresponsive Nanogels for Combined Hyperthermia and Chemotherapy'.
4. **05.2015-11.2015. Nanomatfutur Postdoctoral Fellow.** Dr. Harald Krüger. 'Synthesis of polymer conjugates for theranostics'.
5. **01.2013-11.2016. Nanomatfutur Postdoctoral Fellow.** Dr. Stefanie Wedepohl. 'Biological evaluation of polymer theranostics'.
6. **02.2015-08.2015. Alexander von Humboldt Foundation Postdoctoral Fellow.** Dr. Fitsum Sahle. 'Development of Thermoresponsive Nanogels for Hair Follicle Penetration'.
7. **04.2015-02.2017. Nanomatfutur Postdoctoral Fellow.** Dr. Mrityunjoy Kar. 'Development of interpenetrated nanogels for hyperthermia'.
8. **03.2016-05.2017. Alexander von Humboldt Postdoctoral Fellow.** Dr. Marek Brzeziński. 'Synthesis of PLA-based micro- and nano-particles'.
9. **05.2017-08.2017. Freie Universität Berlin Postdoctoral Fellow.** Dr. Matias Picchio. 'Synthesis of thermoresponsive poly(Casein-g-NIPA) nanogels for their utilization as carriers in multiresponsive drug delivery'.

Support Personal

1. **10.2013-02.2015.** Mrs. Lisa Hummel. Administrative support.
2. **06.2013-10.2013.** Mrs. Azar Gomian. Chemical and biological assistant.
3. **11.2013-11.2016.** Mrs. Katrin Michel. Chemical and biological assistant.

International Research Training at the Freie Universität Berlin

1. **02.2009-08.2009.** Dr. Julieta Paez. Surface Modification Toward Antifouling Materials. National University of Cordoba, Cordoba, Argentina.
2. **04.2010-10.2010.** Dr. Julio Cuggino. Development of Dendritic Thermoresponsive Nanogels. National University of Cordoba, Cordoba, Argentina.
3. **04.2012-07.2012.** Dr. Agustina Aldana. Synthesis of Dendronized Polymers. National University of Cordoba, Cordoba, Argentina.
4. **04.2013-07.2013.** Dr. Ariel Cappelletti. Development of Magneto-Responsive Nanogels. National University of Cordoba, Cordoba, Argentina.
5. **07.2013-09.2013.** B.Sc. Hoda Hazem Mohamed. Novel thermoresponsive nanogels for the drug delivery. German University in Cairo, Egypt.
6. **09.2013-03.2014.** M.Sc. Alberto Sanz de León. Biofunctional platforms fabricated by nanogels immobilization onto honeycomb structured films. Institute of Polymer Science and Technology (ICTP-CSIC), Madrid, Spain.
7. **01.2014-04.2014.** M.Sc. Kushbu Zope. Targeting, Isolation, and Detection of Circulating Tumor Cells. Research & Cell Development Lab, Maharashtra Institute of Pharmacy, Kothurd, Pune, India.
8. **04.2014-09.2014.** M.Sc. Guido Rimondino. Development of Semi-Interpenetrated Nanogels. National University of Cordoba, Cordoba, Argentina.
9. **04.2015-09.2015.** M.Sc. Catalina Biglione. Development of Magneto-Responsive Nanogels. National University of Cordoba, Cordoba, Argentina.

10. **05.2015-08.2015.** Dr. Lydia Bouchet. Synthesis of Anisotropic Gold Nanoparticles. National University of Cordoba, Cordoba, Argentina.
11. **08.2015-09.2015.** B.Sc. Alexandra Buchkin. Mucoadhesive Polymers. Institute for Technology Technion, Haifa, Israel.
12. **08.2015-02.2016.** M.Sc. Ana Lygia dos Santos Camara. Synthesis of prodrug nanoemulsions. Universidade de Brasília, Brazil.
13. **09.2015-12.2015.** M.Sc. Sandra Arias Lopez. Synthesis of Chiroplasmonic Thermoresponsive Nanogels. CiQUS - Center for Research in Biological Chemistry and Molecular Materials. Santiago de Compostela, Spain.
14. **10.2015-12.2015.** B.Sc. Alisa Nevskaja. Synthesis of macromolecular prodrugs. Peoples Friendship University of Russia, Moscow, Russia.
15. **10.2015-02.2016.** Dr. Oscar Rojas. Development of Anisotropic Gold-Based Nanogels. National University, Heredia, Costa Rica.
16. **01.2016-03.2016.** M.Sc. Govind Pandurang Chate. Design, evaluation of cytotoxicity and cellular interactions of hyperbranched polymer (HBP)-PDMS-carbon soot engineered superhydrophobic surfaces (SHS). Maharastra Institute of Technology, Pune, India.
17. **03.2016-02.2017.** M.Sc. Marcelo Kravicz. Poly(succinimide)-graft-poly(glycerol)amines (PSI-g-PG-NH₂) hyperbranched structures and its polyplexes with siRNA: physicochemical and biological evaluation. University of Sao Paulo, Brazil.
18. **03.2016-09.2016.** Lic. Ana Sofia Sonzogni. Transdermal vaccination against Chagas disease. Instituto de Desarrollo Tecnológico para la Industria Química, Argentina.
19. **05.2016-08.2016.** Lic. Cecilia Samaniego Lopez. Synthesis of dendritic receptors for carbohydrates performing recognition at the physiological level. University of Buenos Aires, Argentina.
20. **10.2016-03.2017.** M.Sc. Amit Kumar. Covalent dual labelling of responsive polymers for skin internalization tracking with FLIM and EPR. Delhi University, India.
21. **10.2016-03.2017.** B.Sc. Eva Clemente. Semi-interpenetrating nanogels as cell glue. University of Parma, Italy.
22. **05.2017-09.2017.** B.Sc. Nicolas Guillaume. Systematic screening of thermoresponsive nanogel synthesis conditions. Ecole Nationale Supérieure des Ingenieurs en Arts Chimiques et Technologies. Toulouse, France.

Research Training at External Institutions

1. **04.2010-05.2010.** Harald Krüger. Development of Polyglutamic Acid Peptide Conjugates. Principe Felipe Centro de Investigacion, Valencia, Spain.
2. **04.2010-05.2010.** Ariane Tschiche. Synthesis and Biological Evaluation of Polymer Drug and Dye Conjugates. Principe Felipe Centro de Investigacion, Valencia, Spain.
3. **10.2012-12.2012.** Mazdak Asadian-Birjand. Development of Magneto-responsive Nanogels. National University of Cordoba, Cordoba, Argentina.
4. **09.2013-10.2013.** Harald Krüger. Synthesis of Dendronized Polymers. National University of Cordoba, Cordoba, Argentina.
5. **01.2014-02.2014.** Ana Sousa-Herves. Development of Nanogel Synthesis Techniques. National University of Cordoba, Cordoba, Argentina.
6. **02.2014-04.2014.** Gregor Nagel. Synthesis of Multiresponsive Hydrogels. National University of Cordoba, Cordoba, Argentina.
7. **02.2014-04.2014.** Martina Menger. Development of Thermoresponsive Nanogels. National University of Cordoba, Cordoba, Argentina.
8. **04.2014-07.2014.** Loryn Fechner. Self-Assembled Multivalent (SAMul) Arrays. York University, England.
9. **10.2014.** Harald Krüger. Evaluation of Nitric Oxide Release Polymeric Materials. Sao Paulo University, Diadema, Brazil.
10. **11.2014-12.2014.** Julian Bergueiro. Polymer Nanocarriers. National University of Cordoba, Cordoba, Argentina.

11. **02.2015-04.2015.** Thu Hang Lai. Functionalized and Crosslinked Polymersomes with Adjustable pH Sensitivity. Leibniz Institut für Polymer Forschung Dresden e.V., Dresden, Germany.
12. **09.2015-03.2016.** Sofia Marinova. Henkel AG, Germany.
13. **01.2016-06.2016.** Julian Bergueiro. Environmental Responsive Materials. University of Tokyo, Japan.

MEMBER IN EVALUATION COMMISSIONS

Bachelor Thesis Evaluator

1. **07.12.2015.** Maren Meurer. Freie Universität Berlin. Title: Synthesis and Properties of Core-Multishell Nanocarriers with the Structure hPG-C19-mPEG7.

Master Thesis Evaluator

2. **20.11.2014.** Dennis Müller. Freie Universität Berlin. Title: Polymerisation von Cathecholderivaten.
3. **30.01.2015.** Sebastian Hinojosa. Freie Universität Berlin. Title: Amphiphilic Oxacyclen Derivatives.
4. **28.07.2015.** David Rochette. Freie Universität Berlin. Title: Volume Phase Transition of Polyelectrolyte Microgels.
5. **25.09.2015.** Alexander Oehrl. Freie Universität Berlin. Title: Surface-Immobilized Linear Polyglycerol-Sulfates for Antithrombotic Application.
6. **03.11.2015.** Qingcai Zhao. Freie Universität Berlin. Title: Polymeric Core-Shell Nanoparticles for Biocatalysis in Organic Media.
7. **13.12.2016.** Alexandra Gruber. Freie Universität Berlin. Title: Synthesis and Characterization of Reactive Nanoparticles and Amphiphilic Nanogels.
8. **08.05.2017.** Leonie Gronbach. Freie Universität Berlin. Title: Organotypic head and neck cancer models – a human cell-based evaluation of drug delivery

Doctoral Thesis Evaluator

9. **10.07.2014.** Michaela Mühlberg. Freie Universität Berlin. Title: Chemoselective Modification Strategies for Peptides and Proteins in Aqueous Media.
10. **24.11.2014.** Anja Voreck. Freie Universität Berlin. Title: Structural Characterization of a Transmembrane Protein by Solid-state NMR - A biophysical and functional study of the ABC transporter ArtMP-J.
11. **02.02.2015.** Fanni Daruny Sypaseuth. Freie Universität Berlin. Title: Electrocatalytic Carbon Dioxide Reduction Using Cationic Cp*-Iridium Complexes Bearing Unsymmetrically Substituted Bipyridine Ligands.
12. **08.07.2015.** Raquel Alvarez Velilla. Universidad de Leon, Leon, Spain. Title: Mecanismo de accion de derivados indenoisoquinolinicos frente a la DNA topoisomerase IB de Leishmania como diana terapeutica.
13. **22.07.2015.** Fatemeh Sheikhi Mehrabadi. Freie Universität Berlin. Title: Dendritic Polyglycerol for Efficient Drug and siRNA Delivery.
14. **23.10.2015.** Federica Rossella. Freie Universität Berlin. Title: Design and Synthesis of Cryptophane-based Functionalized Xenon Hosts for MRI Applications.
15. **04.12.2015.** Ariane Tschiche. Freie Universität Berlin. Title: Dendritic Amphiphiles for Gene Delivery Applications.
16. **18.01.2016.** Elisavet Kanaki. Freie Universität Berlin. Title: From surface properties towards a multiscale approach for modelling MgF₂ nanocrystals
17. **19.01.2016.** Gerrit Korff. Freie Universität Berlin. Title: Protein Secondary Structure Prediction Using a Vector-Valued Classifier.
18. **21.04.2016.** Jan Hormann. Freie Universität Berlin. Title: DNA-Spaltung durch Kupfer(II)cyclen-basierte Metallonukleasen: Einfluss von Heteroatomaustausch und Interkalatorsubstitution
19. **22.04.2016.** Darina Heinrich. Freie Universität Berlin. Title: Komplexe zyklischer pi-Perimeter mit fluorierten Substituenten.

20. **30.05.2016.** Stefano Stefani. Freie Universität Berlin. Title: Core-shell and core-amphiphilic branched shell nanocarriers based on biodegradable hyperbranched polymers, as potential drug delivery systems.
21. **30.11.2016.** Larissa von Krbek. Freie Universität Berlin. Title: Cooperative effects in multivalent crown ether/ammonium assemblies.
22. **08.05.2017.** Igor Derr. Freie Universität Berlin. Title: Electrochemical degradation and chemical aging of carbon felt electrodes in all-vanadium Redox flow batteries.
23. **31.05.2017.** Madlen Schumde. Freie Universität Berlin. Title: Gezielte Anordnung von Nanopartikeln auf glatten und strukturierten Oberflächen.
24. **XX.** Yulia Zhukova. Surface Nanostructuring for Cell and Tissue Growth. Max Planck Institute für Kolloid- und Grenzflächenforschung. Title: Surface Nanostructuring for Cell and Tissue Growth

Member of Supervision Commission

1. Doctoral Thesis. M.Sc. Sebastian Hinojosa. Topic: Amphiphilic Oxacyclen Derivatives.
2. Doctoral Thesis. M.Sc. Katharina Hörst. Topic: Adipocyte - Fibroblast Cross Talk as Basis of Tissue Regeneration.
3. Doctoral Thesis. Pharm. Stefan Hönzke. Topic: Die Entwicklung von in vitro Modellen entzündlicher Hauterkrankungen als Testplattform zur systematischen Untersuchung von nanopartikulären Trägersystemen hinsichtlich Effektivität und Toxizität.
4. Doctoral Thesis. M.Sc. Michael Unbehauen. Topic: Responsive Core-Multishell Polymers for Topic Drug Delivery.
5. Doctoral Thesis. M.Sc. Alexander Oehrl. Topic: Polyglycerin-basierte Nano- und Mikrogele zur Proteinverkapselung.
6. Doctoral Thesis. M.Sc. Johannes Stellmacher. Topic: Smart Fluorescent Imaging Modalities.
7. Doctoral Thesis. M.Sc. Dogus Isik. Topic: Amphiphilic Nanogels for Biomedical Applications.

COOPERATIONS PARTNERS IN GERMANY

1. Prof. Dr. E. Rühl. FU Berlin, Institute for Chemistry and Biochemistry.
2. Prof. Dr. U. Alexiev. FU Berlin, Experimental Physics.
3. Prof. Dr. Sarah Hedtrich. FU Berlin, Institute for Pharmacy.
4. PD Dr. Annika Vogt. Charité Berlin, Dermatology Department.
5. PD Dr. Kai Licha. mivenion GmbH.
6. PD Dr. Jens Dervedde. Charité Berlin.
7. Prof. Dr. Blume-Peytavi. Charité Berlin, Dermatology Department.
8. Prof. Dr. R. Haag. FU Berlin, Institute for Chemistry and Biochemistry.
9. Prof. Dr. Volker Haucke. Leibniz-Institut für Molekulare Pharmakologie, Department Molecular Pharmacology and Cell Biology.
10. Dr. Thomas Zollner. Bayer Health Care, Gynecological Therapies, Berlin.

INTERNATIONAL COOPERATION PARTNERS

1. Prof. Dr. Miriam Strumia. Universidad Nacional de Cordoba, **Argentina**.
2. Prof. Dr. David K. Smith. York University, **England**.
3. Dr. María Jesus Vicent. Centro de Investigación Príncipe Felipe, **Spain**.
4. Prof. Dr. Jayant Khandare. Maharastra Institute of Technology, Pune, **India**.
5. Dr. Rodríguez-Hernández. Instituto de Ciencia y Tecnología de Polímeros (ICTP), Madrid, **Spain**.
6. Dr. Alexandra Muñoz-Bonilla. Departamento de Química-Física Aplicada, Facultad de Ciencias, Universidad Autónoma de Madrid, Madrid, **Spain**.
7. Prof. Dr. Roque Minari. INTEC (UNL - CONICET), Grupo de Polímeros y Reactores de Polimerización, Santa Fe, **Argentina**.

8. Prof. Dr. Takuzo Aida. University of Tokyo, **Japan**.
9. Dr. Oscar Rojas. National University, Heredia, **Costa Rica**.
10. Prof. Dr. Joao Paulo Longo. Faculty of Ceilandia, University of Brasilia, Brasilia, **Brazil**.
11. Prof. Dr. Amedea Seabra. Universidade Federal de São Paulo, Departamento de Ciências Exatas e da Terra Laboratório de Matéria e Energia, Diadema, **Brazil**.
12. Dr. Carla C. Spagnuolo. CIHIDECAR-CONICET, Departamento de Química Orgánica, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Buenos Aires, **Argentina**.
13. Dr. Sabrian Pricl. Molecular biology and computational life science presso Mose-Lab, University of Trieste, **Italy**.
14. Prof. Dr. Mohiuddin Abdul Quadir, North Dakota State University, **USA**.
15. Prof. Dr. Ronit Satchi-Fainaro. Sackler Faculty of Medicine, University of Tel Aviv, **Israel**.
16. Prof. Dr. Leonid G. Voskressensky. Peoples' Friendship University of Russia, Moscow, **Russia**.

SELECTED INVITED TALKS AT INTERNATIONAL CONFERENCES

1. **07.2017**. 46th World Chemistry Congress, IUPAC 2017, Sao Paulo, Brazil. *Environmental responsive nanogels as smart therapeutic agents*. Invitation accepted.
2. **05.2016**. 11th International Symposium on Polymer Therapeutics: from Laboratory to Clinical Practice, Valencia, Spain. *Use of dendritic polymer imaging systems for the evaluation of conjugate uptake and cleavage*
3. **11.2015**. Humboldt Kolleg on Sustainable Development: Megatrends of the 21st Century, Goa, India. *Forthcoming opportunities from polymer therapeutics: environmentally triggered theranostics*
4. **07.2014**. CIMTEC 2014 – 6th Forum of New Materials, Montecatimi Termi, Italy. *Functional Thermoresponsive Nanogels for Biomedical Applications*
5. **11.2013**. Spanish-Portuguese Controlled Release Society, Valencia, Spain. *Dendritic thermoresponsive nanogels for externally triggered drug delivery*
6. **06.2013**. International Dendrimer Symposium, Madrid, Spain. *Dendritic Thermoresponsive Nanogels for Biomedical Applications*
7. **11.2011**. Argentina Polymer Symposium, Bahia Blanca, Buenos Aires, Argentina, 2011. *Multifunctional dendritic polyglycerols in nanomedicine*
8. **06.2011**. Advanced Functional Polymers for Medicine 2011. Enschede, The Netherlands. *Multivalent Dendritic Architectures for Biomedical Applications*
9. **11.2010**. Indian Chemical Society Meetings, University of Delhi, India. *Dendritic polyglycerols for biomedical applications*
10. **07.2010**. Controlled Release Society, Portland, USA. *Multifunctional Dendritic Polyglycerol Architectures for Drug and Dye Delivery*
11. **06.2010**. Bio-Dendrimers Symposium, Porquerolles, France. *Dendritic polyglycerols for biomedical applications*

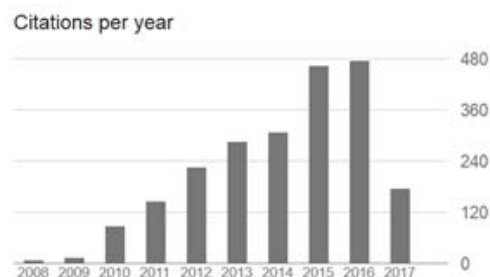
LANGUAGES

1. Spanish (mother language).
2. English (proficiency).
3. German (C1 level).

PUBLICATIONS

Overview

1. **Total Publications:** 103 (60 articles in peer-reviewed journals, 22 reviews and editorials, 4 book chapters, 2 patents, 15 conference proceedings)
2. **Major contribution** on 47: 36 corresponding authorships and 11 first authorships.
3. **H-Factor:** 17 (Web of Science), 21 (Google Scholar)
4. **Total citations** (without self-citations): 1065
5. **Talks and poster presentations** in scientific meetings: over 200



Full list of publications

103. Responsive nanogels for anticancer therapy.

M. Kar, L. Fechner, G. Nagel, E. Glitscher, G.N. Rimondino, **M. Calderón***

RSC Book, Smart Material Series 'Nanogels for Biomedical Applications' (2017). Accepted book chapter.

102. How are we applying nanogel composites in biomedicine?

M. Kar, M. Molina, **M. Calderón***

Nanomedicine (2017), manuscript accepted.

101. Dendritic polyglycerol and N-isopropylacrylamide based thermoresponsive nanogels as smart carriers for controlled delivery of drugs through the hair follicle

F.F. Sahle, M. Giulbudagian, J. Bergueiro, J. Lademann, **M. Calderón***

Nanoscale (2017), 9, 172-182.

100. In vivo comparative study of distinct polymeric architectures bearing a combination of paclitaxel and doxorubicin at a synergistic ratio

H. Baabur-Cohen, L. Vossen, H.R. Krüger, A. Eldar-boock, E. Yeini, N. Landa-Rouben, G. Tiram, S. Wedepohl, E. Markovsky, J. Leor, **M. Calderón***, R. Satchi-Fainaro*

Journal of Controlled Release (2017), <http://dx.doi.org/10.1016/j.jconrel.2016.06.037>.

99. Interactions of organic nanoparticles with proteins in physiological conditions

E. Miceli, M. Kar, **M. Calderón***

Journal of Material Chemistry B (2017), manuscript accepted.

98. Biocompatibility and characterization of polyglycerol-based thermoresponsive nanogels designed as novel drug delivery systems and their intracellular fate in keratinocytes

C. Gerecke, A. Edlich, M. Giulbudagian, F. Schumacher, N. Zhang, A. Said, G. Yealland, S.B. Lohan, F. Neumann, M. Meinke, N. Ma, **M. Calderón**, S. Hedtrich, M. Schaefer-Korting, B. Kleuser

Nanotoxicology (2017), 11, 267-277.

97. Langmuir and Langmuir-Blodgett films of Newkome-type dendrons as model for the development of surface mediated drug delivery systems

N. Dib, A. Reviglio, L. Fernandez, L. Otero, G. Morales, M. Santo, F. Alustiza, A. Liaudat, P. Bosch,

M. Calderón, M. Martinelli, M. Strumia.

Journal of Colloid and Interface Science (2017), 496, 243–253.

96. Metallo-polymer chain extension controls the morphology and release kinetics of microparticles composed of terpyridine-capped polylactides and their stereocomplexes

M. Brzeziński, A. Kacprzak, **M. Calderon**,* S. Seiffert*

Macromolecular Rapid Communications (2017), manuscript accepted.

95. Specific uptake mechanisms of well-tolerated thermoresponsive polyglycerol-based nanogels in antigen-presenting cells of the skin

A. Edlich, C. Gerecke, M. Giulbudagian, F. Neumann, M. Schäfer-Korting, N. Ma, **M. Calderón**, B. Kleuser.

European Journal of Pharmaceutics and Biopharmaceutics (2017),

<http://dx.doi.org/10.1016/j.ejpb.2016.12.016>:

94. Rational design of dendritic thermo-responsive nanogels that undergo phase transition on endolysosomal conditions

G. N. Rimondino, E. Miceli, M. Molina, S. Wedepohl, S. Thierbach, E. Rühl, M. Strumia, M.

Martinelli,* **M. Calderón***

Journal of Material Chemistry B (2017), DOI: 10.1039/C6TB02001A.

93. Drug delivery across intact and disrupted skin barrier: identification of cell populations interacting with penetrated thermoresponsive nanogels

F. Rancan, M. Giulbudagian, J. Jurisch, U. Blume-Peytavi, **M. Calderón**, A. Vogt

European Journal of Pharmaceutics and Biopharmaceutics (2017), <http://dx.doi.org/10.1016/j.ejpb.2016.11.017>.

92. Overcoming drug resistance with on-demand charged thermoresponsive dendritic nanogels by enhanced doxorubicin uptake

M. Molina, S. Wedepohl, E. Miceli, **M. Calderón***

Nanomedicine (2017), 12, 117-129.

91. Functionalized nanogels carrying an anticancer microRNA for glioblastoma therapy

Z. Shatsberg, X. Zhang, P. Ofek, S. Malhotra, A. Krivitsky, A. Scomparin, G. Tiram, **M. Calderón**,

R. Haag, R. Satchi-Fainaro

Journal of Controlled Release (2016), 239, 159–168.

90. Near Infrared Dye Conjugated Thermoresponsive Nanogels, a Mitochondrial Targeting Platform for Combined Photodynamic and Photothermal Therapies

M. Asadian-Birjand, J. Bergueiro, S. Wedepohl, **M. Calderón***

Macromolecular Bioscience (2016), 16, 1432–1441.

89. Transferrin Decorated Thermoresponsive Nanogels as Magnetic Trap Devices for Circulating Tumor Cells

M- Asadian-Birjand, C. Biglione, J. Bergueiro, A. Cappelletti, C. Rahane, G. Chate, J. Khandare, B.

Klemke, M.C. Strumia, **M. Calderon***

Macromolecular Rapid Communications (2016), 37, 439-445.

88. Multiresponsive nanogels for application as smart carriers in endocytic pH-triggered drug delivery systems

J. Cuggino, M. Molina, S. Wedepohl, C. Alvarez Igarzabal, **M. Calderón**, L. Gugliotta

European Polymer Journal (2016), 78, 14-24

87. Effects of Thermoresponsivity and Softness of Polyglycerol-Based Nanogels on Skin Penetration and Cellular Uptake
F. Rancan*, M. Asadian-Birjand, S. Dogan, C. Graf, L. Cuellar, S. Lommatzsch, U. Blume-Peytavi, **M. Calderón***, A. Vogt.
Journal of Controlled Release (2016), 228, 159–169.
86. Fabrication of honeycomb films from highly functional dendritic structures: electrostatic driven immobilization of biomolecules
A.S. De León, S. Malhotra, M. Molina, **M. Calderón**, A. Muñoz-Bonilla, J. Rodríguez-Hernández.
Polymer Chemistry (2016), 7, 4112-4120.
85. Bispecific antibodies for targeted delivery of dendritic polyglycerol prodrug conjugates
F. Sheikhi-Mehrabadi, J. Adelman, S. Gupta, S. Wedepohl, **M. Calderón**, U. Brinkmann, R. Haag.
Current Cancer Drug Targets (2016), 16, 639-649.
84. Polymeric near-infrared absorbing dendritic nanogels for efficient in vivo photothermal cancer therapy
M. Molina, S. Wedepohl, **M. Calderón***.
Nanoscale (2016), 8, 5852–5856.
83. Immobilization of Stimuli-Responsive Nanogels onto Honeycomb Porous Surfaces and Controlled Release of Proteins
A.S. De León, M. Molina, S. Wedepohl, A. Muñoz-Bonilla, J. Rodríguez-Hernández*, **M. Calderón***.
Langmuir (2016), 32, 1854–1862.
82. Restoring the Oncosuppressor Activity of MicroRNA-34a in Glioblastoma Using a Polyglycerol-based Polyplex
P. Ofek, **M. Calderón**, F. Sheikhi-Mehrabadi, R. Haag, A. Kravitsky, N. Yerushalmi, S. Kredor-Russo, Z. Shatsberg, S. Ferber, R. Grossman, Z. Ram, R. Satchi-Fainaro.
Nanomedicine: Nanotechnology, Biology and Medicine (2016), 12, 2201–2214.
81. Correlation between the chemical composition of thermoresponsive nanogels and their interaction with the skin barrier
M. Giulbudagian, F. Rancan, A. Klossek, K. Yamamoto, J. Jurisch, V. Colombo Neto, P. Schrade, S. Bachmann, E. Rühl, U. Blume-Peytavi, A. Vogt, **M. Calderón***
Journal of Controlled Release (2016), 243, 323–332.
80. Dysregulation of key microRNAs controlling tumor-host interactions triggers escape from osteosarcoma dormancy
G. Tiram, P. Ofek, T. Udagawa, N. Shomron, M. Roniger, B. Kerem, Y. Shaked, S. Aviel-Ronen, I. Barshack, **M. Calderón**, R. Haag, R. Satchi-Fainaro
Cancer Research (2016), 76, B42.
79. Identification of dormancy-associated microRNAs for the design of osteosarcoma-targeted dendritic polyglycerol nanopolyplexes
G. Tiram, E. Segal, A. Krivitsky, R. Shreberk-Hassidim, P. Ofek, S. Ferber, T. Udagawa, L. Edry, N. Shomron, M. Roniger, B. Kerem, Y. Shaked, S. Aviel-Ronen, I. Barshack, **M. Calderón**, R. Haag, R. Satchi-Fainaro
ACS Nano (2016), 10, 2028-2045.
78. Interactions of organic nanoparticles with proteins in physiological conditions
Enrico Miceli,a,b Mrityunjoy Kara and Marcelo Calderón Dendritic Polyglycerol-Based Nanogels for Dermal Drug Delivery

- M. Molina, M. Witting, **M. Calderón***, S. Hedtrich*
Controlled Release Society Newsletter (2016), 33, 10-12.
77. New approaches from nanomedicine for treating Leishmaniasis
V. Gutiérrez, A.B. Seabra, R.M. Reguera, J. Khandare, **M. Calderón***.
Chemical Society Reviews (2016), 45, 152-168.
76. Polymeric soft nanocarriers as smart drug delivery systems: State-of-the-art and future perspectives
M. Calderón*, A. Sosnik*.
Biotechnology Advances (2015), 33, 1277-1278. Editorial
75. Structure-activity Relationship Study of Dendritic Polyglycerolamine for Efficient siRNA Transfection
F. Sheikhi-Mehrabadi, O. Hirsch, R. Zeisig, P. Posocco, E. Laurini, S. Pricl, R. Haag, W. Kemmner, **M. Calderón***.
RSC Advances (2015), 5, 78760-78770.
74. Aplicaciones biomédicas de nanogeles dendríticos termosensibles
M. Molina, J. Bergueiro, A. Sousa-Hervés, **M. Calderón***
Revista Iberoamericana de Polímeros (2015), 16, 164-172.
73. Dendritic polymers for smart drug delivery applications
J. Khandare*, **M. Calderón***.
Nanoscale (2015), 7, 3806-3807. Editorial.
72. Stimuli-responsive nanogel composites for biomedical applications.
M. Molina, M. Asadian-Birjand, J. Balach, J. Bergueiro, **M. Calderón***.
Chemical Society Reviews (2015), 44, 6161-6186.
71. Hair Follicles as a Target Structure for Nanoparticles
J. Lademann, F. Knorr, H. Richter, S. Jung, M.M.C. Meinke, E. Ruehl, U. Alexiev, **M. Calderón**, A. Patzelt.
Journal of Innovative Optical Health Sciences (2015), 8, 1530004.
70. Thermoresponsive Nanodevices in Biomedical Applications
J. Bergueiro, **M. Calderón***.
Macromolecular Bioscience (2015), 15, 183-199.
69. Nitric Oxide Releasing Nanomaterials for Cancer Treatment: Current Status and Perspectives
A. B. Seabra, R. de Lima, **M. Calderón**.
Current Topics in Medicinal Chemistry (2015), 15, 298-308.
68. Nanogel coupled cutaneous enzyme delivery as protein replacement therapy for autosomal recessive congenital ichthyosis (ARCI)
R. Plank, R. Casper, K. Obst, M. Hermann, **M. Calderón**, S. Hedtrich, K.M. Eckl, H. Hennies,
J Invest Dermatol (2015), 135, S55-S55.
67. Engineering thermoresponsive polyether-based dendritic nanogels for temperature dependent skin penetration
M. Asadian-Birjand, J. Bergueiro, F. Rancan, J.C. Cuggino, R.-C. Mutihac, K. Achazi, J. Dervedde, U. Blume-Peytavi, A. Vogt, **M. Calderón***.
Polymer Chemistry (2015), 6, 5827-5831.

66. Chitosan-g-oligo(epsilon-caprolactone) polymeric micelles: Microwave-assisted synthesis and physicochemical and cytocompatibility characterization
R.J. Glisoni, S.S. Quintana, M. Molina, **M. Calderón**, A.G. Moglioni, A. Sosnik.
Journal of Material Chemistry B (2015), 82, 351-359.
65. Self-propelled carbon nanotube based microrockets for rapid capture and isolation of circulating tumor cells
S.S. Banerjee, S.S. Banerjee, A. Jalota-Badhwari, K.R. Zope, K.J. Todkar, R.R. Mascarenhas, G.P. Chate, G.V. Khutale, A. Bharde, **M. Calderón**, Jayant J. Khandare.
Nanoscale (2015), 7, 8684-8688.
64. One-pot synthesis of doxorubicin-loaded multiresponsive nanogels based on hyperbranched polyglycerol
A. Sousa-Herves, S. Wedepohl, **M. Calderón***.
Chemical Communications (2015), 51, 5264-5267.
63. Facile ultrasonication approach for the efficient synthesis of ethylene glycol-based thermoresponsive nanogels
C. Biglione, A. Sousa-Herves, M. Menger, S. Wedepohl, **M. Calderón***, M.C. Strumia*.
RSC Advances (2015), 5, 15407-15413.
62. Dendritic Amphiphiles as Additives in Breath Figures: Role of the Molecular Characteristics on the Pore Morphology
A.S. de León, S. Malhotra, M. Molina, R. Haag, **M. Calderón***, J. Rodriguez-Hernandez, A. Munoz-Bonilla*.
Journal of Colloid and Interface Science (2015), 440, 263–271.
61. Thermosensitive Dendritic Polyglycerol-Based Nanogels for Dermal Drug Delivery of Biomacromolecules
M. Witting, M. Molina, K. Obst, H.C. Hennies, **M. Calderón**, W. Frieß, S. Hedtrich.
Nanomedicine: Nanotechnology, Biology, and Medicine (2015), 11, 1179-1187.
60. Dendritic polymer imaging systems for the evaluation of conjugate uptake and cleavage
H. R. Krüger, G. Nagel, S. Wedepohl, **M. Calderón***.
Nanoscale (2015), 7, 3838-3844. Highlighted as front cover.
59. Semi-interpenetrated thermoresponsive nanogels based on dendritic polyglycerol for biomedical applications
M. Calderón*, M. Molina, S. Wedepohl. 2015. German Patentanmeldung, Application number 10 2015 211 821.5.
58. Dendritic polyglycerol sulfate as a novel platform for paclitaxel delivery: pitfalls of ester linkage
A. Sousa-Herves, P. Würfel, N. Wegner, J. Khandare, K. Licha, R. Haag, P. Welker,* **M. Calderón***.
Nanoscale (2015), 7, 3923-3932.
57. First generation newkome-type dendrimer as solubility enhancer of antitumor benzimidazole carbamate
N. Dib, L. Fernández, L. Otero, M. Santo, **M. Calderón**, M. Martinelli, M. Strumia.
Journal of Inclusion Phenomena and Macrocyclic Chemistry (2015), 82, 351-359.
56. Positively charged thermoresponsive nanogels for anticancer drug delivery
M. A. Molina, M. Giubudagian, and **M. Calderón***.
Macromolecular Chemistry and Physics. (2014), 215, 2414-2419.

55. Multimodal nanomedicine for glioblastoma
P. Ofek, **M. Calderón**, F. Sheikhi-Mehrabadi, Shiran Ferber, R. Haag and R. Satchi-Fainaro.
Cancer Research 74 (2014), 4391-4391.
54. Reverting the angiogenic switch of glioblastoma with a nanopolyplex based on the molecular fingerprint of tumor dormancy
S. Ferber, G. Tiram, O. Amsalem, E. Yavin, N. Almog, J. Henkin, **M. Calderón**, R. Haag, R. Satchi-Fainaro.
Cancer Research 74 (2014), 104-104.
53. Fabrication of thermoresponsive nanogels by thermo-nanoprecipitation and in situ encapsulation of bioactives
M. Giubudagian‡, M. Asadian-Birjand‡, D. Steinhilber, K. Achazi, M. A. Molina, and **M. Calderón***.
Polymer Chemistry (2014), 5, 6909-6913. Highlighted as back cover.
52. Imaging of doxorubicin release from theranostic macromolecular prodrugs via fluorescence resonance energy transfer
H.R. Krüger, I. Schütz, A. Justies, K. Licha, P. Welker, V. Haucke, **M. Calderón***.
Journal of Controlled Release (2014), 194, 189-196.
51. Polyglycerol-based amphiphilic dendrons as potential siRNA carriers for in vivo applications
A. Tschiche, A.M. Staedtler, S. Malhotra, H. Bauer, C. Böttcher, S. Sharbati, **M. Calderón**, M. Koch, T.M. Zollner, A. Barnard, D.K. Smith, R. Einspanier, N. Schmidt, R. Haag.
Journal of Material Chemistry B 2 (2014), 2153-2167.
50. Nanoscale self-assembled multivalent (SAMul) heparin binders in highly competitive, biologically relevant, aqueous media
S.M. Bromfield, C.W. Chan, P. Posocco, S. Pricl, **M. Calderón**, J.E. Turnbull, D.K. Smith.
Chemical Science 5 (2014), 1484-1492.
49. Double-degradable responsive self-assembled multivalent arrays – temporary nanoscale recognition between dendrons and DNA
A. Barnard, P. Posocco, M. Fermeglia, A. Tschiche, **M. Calderón**, S. Pricl, and D.K. Smith.
Organic and Biomolecular Chemistry 12 (2014), 446-455.
48. Receptor mediated cellular uptake of low molecular weight dendritic polyglycerols
M. Calderón*, S. Reichert, P. Welker, K. Licha, F. Kratz, R. Haag,
Journal of Biomedical Nanotechnology 10 (2014), 92-99.
47. A special issue on polymer conjugate based nanotherapeutics
R. Jayakumar, J. Khandare, **M. Calderón**, O. Perumal.
Journal of Biomedical Nanotechnology 10 (2014), 1-3. Editorial.
46. Hyperbranched and hyperfunctionalized materials from dendritic chemistry.
M. Calderón*, M. Strumia*.
Rev. LatinAm. Metal. Mat. 33 (2013), 2-14.
45. Targeted delivery of dendritic polyglycerol-doxorubicin conjugates by scFv-SNAP fusion protein suppresses EGFR+ cancer cell growth.
A. Hussain, H.R. Krüger, F. Kampmeier, T. Weissbach, K. Licha, F. Kratz, R. Haag, **M. Calderón***, S. Barth*.
Biomacromolecules 14 (2013), 2510-2520.

44. Anionic dendritic polymers for biomedical applications.
D. Gröger, A. Sousa-Herves, **M. Calderón**, E. Fernandez-Megia, and R. Haag.
Book chapter in *Dendrimers for Biomedical Applications*, Ed. B. Klajnert, L. Peng, V. Cena, RSC Publishing, (2013), 56-72.
43. Glycine-terminated dendritic amphiphiles for nonviral gene delivery.
S. Malhotra, H. Bauer, A. Tschiche, A. Staedtler, A. Mohr, **M. Calderón**, V. Parmar, L. Hoeke, S. Sharbati, R. Einspanier and R. Haag
Biomacromolecules 13 (2012), 3087–3098.
42. Targeting siRNA to tumors and their stroma as a dual anticancer and anti-angiogenic therapy
P. Ofek, W. Fischer, **M. Calderón**, R. Haag, R. Satchi-Fainaro.
Cancer Research 72 (2012), 5650-5650.
41. Effects of a PEG additive on the biomolecular interactions of self-assembled hybrid nanoscale architectures.
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