

Elena Pazos – curriculum vitae

Academic background

- 16/02/2012 **PhD, Organic Chemistry** ("Apto cum laude"; "Extraordinary PhD Award"). *Universidade de Santiago de Compostela*, Spain. "Luminescent probes of proteins involved in cancer".
- 2008 **Master in Organic Chemistry**. *Universidade de Santiago de Compostela*, Spain. "Development of fluorescent peptides to study protein-protein interactions in cell cycle regulation."
- 2006-2007 **Certificate of pedagogical aptitude (CAP)**. *Universidade de Santiago de Compostela*, Spain.
- 2001-2006 **BS Degree in Chemistry** - "Chemistry of bioactive compounds". *Universidade de Santiago de Compostela*, Spain.

Research and teaching experience

- 2017-.... July 1, 2017 – , **InTalent Researcher** at Advanced Scientific Research Center (CICA) and Chemistry Department, *Universidade da Coruña*, Spain.
- 2015-2017 December 1, 2015 – June 30, 2017, **TECNIOspring & Marie Curie Fellow** at *Centro Tecnològic de la Química de Catalunya (CTQC)*, Spain.
- 2014-2015 October 1, 2014 – November 30, 2015, research officer at *Medcom Advance*, Spain.
- 2015 October 28, 2015, Accreditation "Profesor Contratado Doctor", "Profesor Ayudante Doctor", and "Profesor de Universidad Privada".
- 2012-2014 November 5, 2012 – September 30, 2014, postdoctoral researcher with **Prof. Samuel Stupp** at the Simpson Querrey Institute for BioNanotechnology (SQI), *Northwestern University*, USA. **Postdoctoral fellowship** funded by **Fundación Barrié**.
- 2012 February 17 – September 30, postdoctoral researcher with **Prof. José L. Mascareñas** and **Prof. M. Eugenio Vázquez** at the Department of Organic Chemistry and Center for Research in Biological Chemistry and Molecular Materials (CIQUS), *Universidade de Santiago de Compostela*, Spain.
- 2010 June 15 – October 15, research internship with **Prof. Scott K. Silverman** at the Department of Chemistry, *University of Illinois at Urbana-Champaign*, USA, working on the development of novel biophysical tools for site-specific labeling of RNA using "small-molecule DECAL".
- 2008 June 15 – October 15, research internship with **Prof. Thorfinnur Gunnlaugsson** at the Department of Chemistry, *Trinity College of Dublin*, Ireland, working on the development of novel lanthanide luminescent supramolecular self-assembly structures.
- 2008-2010 Teaching assistant at the Organic Chemistry Department, *Universidade de Santiago de Compostela*, Spain.
- 2006-2007 October 1, 2006 – April 30, 2007, teaching assistant fellowship funded by the Department of Organic Chemistry, *Universidade de Santiago de Compostela*, Spain.
- 2006-2012 October 1, 2006 – February 16, 2012, PhD student with **Prof. José L. Mascareñas** and **Prof. M. Eugenio Vázquez** at the Department of Organic Chemistry and Center for Research in Biological Chemistry and Molecular Materials (CIQUS), *Universidade de Santiago de Compostela*, Spain. **FPU PhD Fellowship** funded by the *Spanish Ministry of Education and Science* from May 2, 2007 to May 1, 2011.
- 2005-2006 October 1, 2005 – June 30, 2006, **research assistant fellowship** funded by the *Spanish Ministry of Education and Science* at the Department of Organic Chemistry, *Universidade de Santiago de Compostela*, Spain.

Publications and patents

Publications

- **Elena Pazos**, Manuel García-Algar, Cristina Penas, Moritz Nazarenius, Arnau Torruella, Nicolas Pazos- Perez, Luca Guerrini, M. Eugenio Vázquez, Eduardo García-Rico, Jose L. Mascareñas, Ramon A. Alvarez-Puebla. "SERS surface selection rules for the proteomic liquid biopsy in real samples. Efficient detection of the oncoprotein c-MYC." *J. Am. Chem. Soc.* **2016**, *138*, 14206-14209.
- Carme Catala, Bernat Mir-Simon, Xiaotong Feng, Celia Cardozo, Nicolas Pazos-Perez, **Elena Pazos**, Sara Gómez-de Pedro, Luca Guerrini, Alex Soriano, Jordi Vila, Francesc Marco; Eduardo García-Rico, Ramon A. Alvarez-Puebla. "Online SERS quantification of *Staphylococcus aureus* and the application to diagnostics in human fluids." *Adv. Mat. Tech.* **2016**, *1*, 1600163.

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- Nicolas Pazos-Perez, **Elena Pazos**, Carme Catala, Bernat Mir-Simon, Sara Gómez-de Pedro, Juan Sagalés, Carlos Villanueva, Jordi Vila, Alex Soriano, F. Javier García de Abajo, Ramon A. Alvarez-Puebla. "Ultrasensitive multiplex optical quantification of bacteria in large samples of biofluids." *Sci. Rep.* **2016**, *6*, 29014.
- **Elena Pazos**, Eduard Sleep, Charles M. Rubert Pérez, Sungsoo S. Lee, Faifan Tantakitti, Samuel I. Stupp. "Nucleation and Growth of Ordered Arrays of Silver Nanoparticles on Peptide Nanofibers: Hybrid Nanostructures with Antimicrobial Properties." *J. Am. Chem. Soc.* **2016**, *138*, 5507-5510.
- **Elena Pazos**, José L. Mascareñas, M. Eugenio Vázquez. "Identification of Cyclin A binders with a fluorescent peptide sensor." In Cyclin-Dependent Kinase (CDK) Inhibitors: Methods and Protocols, Methods in Molecular Biology; Mar Orzáez et al., Eds.; Springer: New York, 2016; Vol. 1336, 67-83.
- **Elena Pazos**, Cecilia Portela, Cristina Penas, M. Eugenio Vázquez, José L. Mascareñas. "Fos-DNA conjugate acting as a dominant negative to the c-Jun oncoprotein." *Org. Biomol. Chem.* **2015**, *13*, 5385-5390.
- **Elena Pazos**, M. Eugenio Vázquez. "Advances in lanthanide-based luminescent peptide probes for monitoring the activity of kinase and phosphatase." *Biotechnol. J.* **2014**, *9*, 241-252.
- Luca Guerrini, **Elena Pazos**, Cristina Penas, M. Eugenio Vázquez, José L. Mascareñas, Ramon A. Alvarez-Puebla. "Highly sensitive SERS quantification of the oncogenic protein c-Jun in cellular extracts." *J. Am. Chem. Soc.* **2013**, *135*, 10314-10317.
- Cristina Penas, **Elena Pazos**, José L. Mascareñas, M. Eugenio Vázquez. "A folding-based approach for the luminescent detection of a short RNA hairpin." *J. Am. Chem. Soc.* **2013**, *135*, 3812-3814.
- **Elena Pazos**, Marko Goličnik, José L. Mascareñas, M. Eugenio Vázquez. "Detection of phosphorylation states by intermolecular sensitization of lanthanide-peptide conjugates." *Chem. Commun.* **2012**, *48*, 9534-9536.
- Adrián Jiménez-Balsa, **Elena Pazos**, Borja Martínez-Albardonedo, José L. Mascareñas, M. Eugenio Vázquez. "Temporary Electrostatic Impairment of DNA Recognition: Light-Driven DNA Binding of Peptide Dimers." *Angew. Chem. Int. Ed.* **2012**, *51*, 8825-8829.
- **Elena Pazos**, Miguel Pérez, Hugo Gutiérrez-de-Terán, Mar Orzáez, Tatiana Guevara, José L. Mascareñas, M. Eugenio Vázquez. "Rational design of a Cyclin A fluorescent peptide sensor." *Org. Biomol. Chem.* **2011**, *9*, 7629-7632.
- **Elena Pazos**, Adrián Jimenez-Balsa, José L. Mascareñas, M. Eugenio Vázquez. "Sensing Coiled-Coil Proteins through Conformational Modulation of Energy Transfer Processes. Selective Detection of the Oncogenic Transcription Factor c-Jun." *Chem. Sci.* **2011**, *2*, 1984-1987.
- **Elena Pazos**, Jesús Mosquera, M. Eugenio Vázquez, José L. Mascareñas. "DNA Recognition by Synthetic Constructs." *ChemBioChem* **2011**, *12*, 1958-1973.
- **Elena Pazos**, Olalla Vázquez, José L. Mascareñas, M. Eugenio Vázquez. "Peptide-based fluorescent biosensors." *Chem. Soc. Rev.* **2009**, *38*, 3348-3359.
- **Elena Pazos**, Daniel Torrecilla, Miguel Vázquez, Luis Castedo, José L. Mascareñas, Anxo Vidal, M. Eugenio Vázquez. "Cyclin A Probes by Means of Intermolecular Sensitization of Terbium-Chelating Peptides." *J. Am. Chem. Soc.* **2008**, *130*, 9652-9653.

Patents

- Nicolas Pazos-Perez, **Elena Pazos**, Carme Català, Bernat Mir-Simon, Sara Gomez-de Pedro, Juan Sagales, Carlos Villanueva, Ramon A. Alvarez-Puebla. "A method for detection of presence or absence of analytes in fluids and an optical detection system for carrying out the method." *Application number*: PCT/EP2015/067717 (International); *priority date*: July 21, 2015.
- **Elena Pazos Chantretero**, Anxo Vidal Figueroa, José Luís Mascareñas Cid, M. Eugenio Vázquez Sentís. "Sensor fluorescente y su uso para la detección de inhibidores de kinasas dependientes de ciclinas y/o para la detección de ciclinas." *Patent number*: ES 2 331 286 B2 (Spain), PCT/ES2009/070246 (International), *priority date*: June 26, 2008; *filling date*: June 24, 2009.

Communications in meetings

Oral communication: Alicia Torres-Nuñez, Ramón A. Alvarez-Puebla, Samuel Stupp, Elena Pazos. "Nucleation and growth of ordered arrays of silver nanoparticles on peptide nanofibers: hybrid nanostructures with antimicrobial properties." XXXVI RSEQ Biennial Meeting, Sitges, Spain; June 25-29, 2017.

Oral communication: Elena Pazos, Manuel Garcia-Algar, Cristina Penas, Arnau Torruella, Nicolas Pazos-Perez, Luca Guerrini, M. Eugenio Vázquez, Eduardo Garcia-Rico, Jose L. Mascareñas, Ramón A. Alvarez-Puebla. "SERS-based Sensors of Oncogenic Transcription Factors." 100th Canadian Chemistry Conference and Exhibition, Toronto, Canada; May 28-June 1, 2017.

Invited talk: "SERS-based sensors of proteins involved in cancer." Multidisciplinary Seminar Program – Universitat Rovira i Virgili, Tarragona, Spain; May 12, 2017.

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Invited talk: *"SERS Detection of Oncogenic Transcription Factors."* Nanotechnology applications. Current challenges: seeking strategies and solutions, Tarragona, Spain; November 29, 2016.

Oral communication: Elena Pazos, Luca Guerrini, Cristina Penas, Hainan Xie, M. Eugenio Vázquez, Jose L. Mascareñas, Ramón A. Alvarez-Puebla. *"SERS Detection of Oncogenic Transcription Factors."* XXXV RSEQ Biennial Meeting, A Coruña, Spain; July 19-23, 2015.

Oral communication: Elena Pazos. *"Peptide-based sensors and delivery platforms."* IV Reunión Gallega de Jóvenes Investigadores en el extranjero, A Coruña, Spain; December 26, 2013.

Oral communication: Elena Pazos, José L. Mascareñas, M. Eugenio Vázquez. *"Sensing Coiled-Coil Proteins through Conformational Modulation of Energy Transfer Processes. Selective Detection of the Oncogenic Transcription Factor c-Jun."* XXXIII RSEQ Biennial Meeting, Valencia, Spain; July 25-28, 2011.

Oral communication: Elena Pazos, Mateo I. Sánchez, Jesús Mosquera, Cristina Penas, José L. Mascareñas, M. Eugenio Vázquez. *"Lanthanide sensitization and fluorescent sensing of A/T-rich DNA sequences and oncogenic bZIP transcription factors."* 240th ACS National Meeting and Exposition, Boston, USA; August 22-26, 2010.

Oral communication: Elena Pazos, Daniel Torrecilla, Miguel Vázquez, José L. Mascareñas, Anxo Vidal, M. Eugenio Vázquez. *"Design and synthesis of novel Cyclin A fluorescent probes."* XI Iberian Peptide Meeting, Santiago de Compostela, Spain; March 6-7, 2008.

Poster: Participation in 15 national and international meetings.