Sebastián Barata Vallejo

1.- Educational Background

- **PhD in Pharmacy and Biochemistry** **2012**
  Universidad de Buenos Aires, Faculty of Pharmacy and Biochemistry, Argentina.
  PhD thesis: "Study of Free Radical Reactions in Water and Microheterogeneous Media"
  "Universidad de Buenos Aires Award" to the best PhD Thesis of the year 2012.

- **Biochemist** . **2009**
  Universidad Maimónides, Buenos Aires, Argentina.

- **Pharmacist** **2006**
  Universidad de Belgrano, Buenos Aires, Argentina.

2.- Professional Experience

- **CONICET (Buenos Aires, Argentina)** **2008 – present**

  Researcher **(2015 - present)** of the National Scientific and Technical Research Council of Argentina (CONICET)
  - Leading researcher in new strategies of Organic Radical synthesis.
  - Study of radical reactions in biomimetic models of lipids (liposomes), proteins and nucleic acids.
  - Active research on sulphur Radical Chemistry.
  - Study of radical reaction kinetics.
  - Director of projects that involve the synthesis of novel compounds with pharmacological and industrial interest. **PICT-2016-1495**: "Allylic Radical Fluorination: Synthesis, Mechanistical Studies and Applications in the Development of New Molecules of Biological Interest"
  - Development of new methodologies to obtain fluorinated molecules with potential pharmacological and agrochemical use.
  - Responsible for the training in research of postgraduate work teams.
  - Publication of results in high impact factor journals and international conferences.
  - PhD theses director.
  - Management of international research networks.

  Postdoctoral Fellow **(2013 - 2014)** of the National Scientific and Technical Research Council (CONICET)
  - Experimental coordinator in projects involving radical synthesis of organic compounds with pharmacological and industrial interest, in environmentally friendly media.
  - Guidance of research and development interns within the framework of M.Sc. theses and scientific initiation.
  - Participation in international research networks.
  - Frequent visits to ISOF-CNR, Bologna, Italia.

  Doctoral Scholar **(2008 - 2012)** of the National Scientific and Technical Research Council (CONICET)
  - Doctoral scholar in the area of Organic Radical Chemistry.
  - Continuous training through courses and seminars in the *Universidad de Buenos Aires* (Argentina), *UPMC Sorbonne Universities* (Paris, France) and *Consiglio Nazionale delle Ricerche* (Bologna, Italy).

- **UBA (Buenos Aires, Argentina)** **2010 – present**

  ***Assistant Professor* (2012 – present)** Organic Chemistry Department, Faculty of Pharmacy and Biochemistry, *Universidad de Buenos Aires* (UBA).
  - Organic Chemistry I.
  - Forensic Chemistry.
  - Postgraduate courses on Free Radical Organic Chemistry.

  ***Lecturer* (2010 - 2011)** Organic Chemistry Department, Faculty of Pharmacy and Biochemistry, *Universidad de Buenos Aires* (UBA).
  - Organic Chemistry I.

3.- Publications

- **Barata-Vallejo, S.**; Ferreri, C.; Golding, B.; Chatgilialoglu, C. "Hydrogen Sulfide: A Reagent for pH-Driven Bioinspired 1,2-Diol Mono-deoxygenation and Carbonyl Reduction in Water" *Organic Letters*. American Chemical Society, **2018**. vol. *20*, p. 4290-4294.
- **Barata-Vallejo, S.**; Cooke, M.V.; Postigo, A. "Radical Fluoroalkylation Reactions". *ACS Catalysis*. American Chemical Society, **2018**. vol. *8*, p. 7287-7307.
- Lantaño, B.; **Barata-Vallejo, S.**; Postigo, A. "Organic Dye-Photocatalyzed Perfluoroalkylation of Heteroarene-N-oxide Derivatives". *Organic & Biomolecular Chemistry*. Royal Society Publishing, 2018. vol. 16 p. 6718 – 6727.
- **Barata-Vallejo, S.*** "Fluorination of Allylic Positions Toward the Synthesis of Fluorinated Bioactive Compounds". Book chapter in: Late-Stage Fluorination of Bioactive Molecules and Biologically-Relevant Substrates. *Elsevier*, 2018. ISBN: 9780128130391.
- Yerien, D. E.; **Barata-Vallejo, S.***; Camps, B.; Cristófalo A. E.; Cano M. E.; Uhrig, M. L.; Postigo A. "Electron-catalyzed radical perfluoroalkylation of organic sulfides: the serendipitous use of the TMEDA/I_2 complex as radical initiator". *Catalysis Science & Technology*. Royal Society of Chemistry, **2017**. vol *7* p. 2274 – 2282.
- Yerien, D. E.; **Barata-Vallejo**, S.; Postigo, A. "Difluoromethylation reactions of organic compounds" *Chemistry - A European Journal*. Wiley, **2017**. vol. *23* p. 14676 – 14701.
- Llantén, H.; **Barata-Vallejo, S.**; Postigo, A.; Colinas, P.A. "Synthesis of C-glycosylmethyl isoxazoles via aerobic oxidation of ketoximes catalyzed by TEMPO". *Tetrahedron Letters*. Elsevier, **2017**. vol. *58* p. 1507 – 1511
- Torviso, M.R.; Mansilla, D.; Garcia, S.; Lantaño, B.; **Barata-Vallejo, S.**; Postigo, A. "Late-stage electron-catalyzed perfluoroalkylation of coumarin derivatives - Thermal fluoroalkyl radical production from sodium perfluoroalkyl sulfinate salts". *Journal of Fluorine Chemistry*. Elsevier, **2017**. vol. *197* p. 42 – 48.
- Yerien, D. E.; Conde, R.; **Barata-Vallejo, S.**; Camps B.; Lantaño, B.; Postigo, A. "Transition metal and organophotocatalyst free perfluoroalkylation reaction of amino(hetero) aromatics initiated by the complex [(TMEDA)I.I_3] and visible light". *RSC Advances*. Royal Society Publishing, **2017** vol. *2017* p. 266 - 274.
- **Barata-Vallejo, S.**; Bonesi, S.; Postigo, A. "Late stage trifluoromethylthiolation strategies for organic compounds" *Organic & Biomolecular Chemistry.* Royal Society Publishing, **2016.** vol. *14* p. 7150 – 7182.

- **Barata-Vallejo, S.**; Yerien D.E.; Lantaño, B.; Postigo, A. "Transition metal-free photoorganocatalytic fluoroalkylation reactions of organic compounds". *Current Organic Chemistry*. Bentham Science, **2016**. vol. *20* p. 1 – 10.
- **Barata-Vallejo, S.**; Ferreri, C.; Zhang, T.; Permentier, H.; Bischoff, R.; Brobowski, K; Chatgilialoglu, C. "Radiation Chemical Studies of Gly-Met-Gly in Aqueous Solution". *Free Radical Research*. Taylor & Francis, **2016**. vol. *50* p. 24 - 38.
- Lantaño, B.; Torviso, R.; Bonesi, S.M.; **Barata-Vallejo, S.**; Postigo, A. "Advances in metal-assisted non-electrophilic fluoroalkylation reactions of organic compounds". Coordination Chemistry Reviews. Elsevier, **2015**. vol. *285* p. 76 – 108.
- Cort, A.; Ozben, T.; Sansone, A.; **Barata-Vallejo, S.**; Chatgilialoglu, C.; Ferreri, C. "Bleomycin-induced trans lipid formation in cell membranes and in liposome models". Organic & Biomolecular Chemistry. Royal Society Publishing, **2015**. vol. *13* p. 1100 – 1105.
- **Barata-Vallejo, S.**; Yerien, D.E.; Postigo, A. "Benign perfluoroalkylation of aniline derivatives through photoredox organocatalysis under visible-light irradiation". *European Journal of Organic Chemistry*. Wiley-VCH, 2015. Vol *2015* p. 7869 – 7875.
- **Barata-Vallejo, S.**; Bonesi, S.M.; Postigo, A. "Photocatalytic fluoroalkylation reactions of organic compounds". *Organic & Biomolecular Chemistry*. Royal Society Publishing, **2015**. vol. *13* p. 11153 – 11183.
- **Barata-Vallejo, S.**; Bonesi, S.M.; Postigo, A. "Perfluoroalkylation reactions of (hetero)arenes". *Organic & Biomolecular Chemistry*. Royal Society Publishing, **2015**. vol. *5* p. 62498 – 62518.
- Lantaño B.; **Barata-Vallejo, S.**; Torviso, R.; Bonesi, S.M.; Argüello, J.E.; Postigo, A. "Direct C-H bond perfluorobutylation of (di)benzo(hetero)arenes in aqueous media". *Journal of Fluorine Chemistry*. Elsevier, **2014**. vol. *161* p. 149 – 155.
- **Barata-Vallejo, S.**; Torviso, R.; Bonesi ,S.M.; Lantaño; B.; Postigo, A. "Nucleophilic non-metal assisted trifluoromethylation and perfluoroalkylation reactions of organic substrates". *Journal of Fluorine Chemistry*. Elsevier, **2014**. vol. *161* p. 134 – 141.
- **Barata-Vallejo, S.**; Lantaño, B; Postigo, A. "Recent advances in trifluoromethylation reactions with electrophilic trifluoromethylating reagents". *Chemistry - A European Journal*. Wiley, **2014**. vol. *20* p. 16806 – 16829.
- Lantaño, B.; **Barata-Vallejo, S.**; Torviso, R.; García, S.M.; Tinnirello, A.; Postigo, A. "Perfluorobutylation of benzo(hetero)arenes in aqueous media". *Biointerface Research in Applied Chemistry*. **2014** vol. *4* p. 861 – 864.
- **Barata-Vallejo, S.**; Postigo, A. "Metal-Mediated Radical Perfluoroalkylation of Organic Compounds". *Coordination Chemistry Reviews*. Elsevier, **2013**. vol. *257*, p. 3051-3069.
- **Barata-Vallejo, S.**; Martin Flesia, M.; Lantaño, B.; Arguello, J.; Peñeñory, A.; Postigo, A. "Heterogeneous Photoinduced Homolytic Aromatic Substitution of Electron-Rich Arenes with Perfluoroalkyl Groups in Water and Aqueous Media - A Radical-Ion Reaction". *European Journal of Organic Chemistry*. Wiley-VCH, **2013**. vol. *2013*, p. 998-1008.
- **Barata-Vallejo, S.**; Yerien, D.; Postigo, A. "Reactivity of Thiyl Radicals Generated from Thiomethoxide and Dimethyldisulfide in Microheterogeneous Media". *Current Organic Chemistry*. Bentham Science, **2012**. vol. *16,* p. 2423-2429.
- **Barata-Vallejo, S.**; Postigo, A. "Reactions of Fluorinated Radicals in Water and Aqueous Media". *European Journal of Organic Chemistry*. Wiley-VCH, **2012**. vol. *2012*, p.1889-1899.
- Jiang, D.; **Barata-Vallejo, S.**; Golding, B. T.; Ferreri, C.; Chatgilialoglu, C. "Revisiting the reaction of hydroxyl radicals with vicinal diols in water". *Organic & Biomolecular Chemistry*. Royal Society Publishing, **2012**. vol. *10*, p. 1102-1107.

- **Barata-Vallejo, S.**; Postigo, A. "Photoinduced Addition Reactions in Aqueous Media". *Current Organic Chemistry.* Bentham Science, **2012**. vol. *16,* p. 2354-2364.
- Torreggiani, A.; **Barata-Vallejo, S.**; Chatgilialoglu, C. "Combined Raman and IR spectroscopic study on the radical-based modifications of methionine". *Anal. Bioanal. Chem.* SpringerLink, **2011**. vol. *401,* p. 1231-1239.
- Slodowicz, M,; **Barata Vallejo, S.**; Vázquez, A,; Sbarbati Nudelman, N.; Postigo, A. "Light-induced iodoperfluoroalkylation reactions of carbon–carbon multiple bonds in water". *Journal of Fluorine Chemistry.* Elsevier, **2011**. vol. *135*, p. 137-143.
- **Barata-Vallejo, S.**; Nudelman, N. S.; Postigo, A. "Organic synthesis in water mediated by silyl radicals**".** *Current Organic Chemistry.* Bentham Science, **2011**. vol. *15,* p. 1826-1842.
- **Barata-Vallejo, S.**; Postigo, A. "$(Me_3Si)_3SiH$-mediated Radical Perfluoroalkylation of Olefins in Water". *Journal of Organic Chemistry*. American Chemical Society, **2010**. vol. *75,* p. 6141-6148.
- **Barata-Vallejo, S.**; Ferreri, C.; Postigo, A.; Chatgilialoglu, C. "Radiation Chemical Studies of Methionine in Aqueous Solution: Understanding the Role of Molecular Oxygen". *Chemical Research in Toxicology*. American Chemical Society, **2010**. vol. *23,* p. 258-263.

4.- Additional Information

- Fluent in English, Spanish and Italian
- Specialization courses taken at *UPMC Sorbonne Universités* (Paris, France), *Universidad de Buenos Aires* (Argentina) and *Consiglio Nazionale delle Ricerche* (Bologna, Italy).
- Author of thirty presentations at international conferences in the form of oral presentations or posters.
- Director, Co-director and / or member of the responsible group for research grants funded by CONICET (Argentina), UBA (Argentina), National Agency for Scientific and Technological Promotion (ANPCyT, Argentina), and European Union.
- Active scientific collaborations with research groups from University of Newcastle (United Kingdom), National University of Córdoba (Argentina), University of Groningen (The Netherlands) ISOF-CNR (Italy), University of Bologna (Italy), and Tokyo Institute of Technology (Japan).
- Active member of the Society of Organic Chemistry Research (SAIQO).
- Argentine representative (management committee observer) of the COST Action "Biomimetic Radical Chemistry" (European Union).