

**Part A. PERSONAL INFORMATION**

CV date: 05/07/2017

First and Family name	Jose Luis Vicario		
ID number	18592109-J	Age	44
Researcher numbers	Researcher ID	H-4001-2011	
	Orcid code	0000-0001-6557-1777	

A.1. Current position

Name of University	Universidad del Pais Vasco/Euskal Herriko Unibertsitatea		
Department	Department of Organic Chemistry II		
Address and Country	P.O. Box. 644, 48080 Bilbao (Spain)		
Phone number	+34 637 558213	E-mail	jose Luis.vicario@ehu.es
Current position	Full Professor (Catedrático de Universidad)	From	01/06/2016
Espec. cód. UNESCO	230610, 230691, 230616		
Palabras clave	Síntesis asimétrica, catálisis, síntesis total, heterociclos		

A.2. Education

PhD	University	Year
Degree in Science, (Chemistry Section)	Universidad del Pais Vasco/Euskal Herriko Unibertsitatea	1996
PhD in Chemistry	Universidad del Pais Vasco/Euskal Herriko Unibertsitatea	2000

A.3. Scientific Quality Indicators

Sexenios de investigación: 3 (The last one obtained in 2014)
Number of PhD theses supervised: 17 (6 in progress); 14 in the last ten years
Number of articles published in indexed (JCR) journals: 88 (33 in the last 5 years)
Total citations: 2530 (1191 in the last 5 years)
Citations / article: 28.75 (36.09 in the last 5 years)
Average citations / year: 120.24
Number of Q1 publications: 76 (86%); 28 in last 5 years (84%)
h index: 28

Part B. CV SUMMARY (max. 3500 characters, including spaces)

Jose L. Vicario (Elda, Alicante, 1973) graduated in Chemistry from the University of the Basque Country in 1996 and finished his undergraduate studies as Erasmus student under the guidance of Prof. Dr. Gerard van Koten at Utrecht University working in the field of organometallic chemistry by developing chiral Mn(II)/pincer catalysts for cross coupling and conjugate addition reactions. From 1997 to 2000 he carried out PhD studies the Univ. of the Basque Country under the supervision of Prof. Dr. M. D. Badía and Prof. Dr. E. Domínguez working in the development of synthetic methodology using chiral auxiliaries and the application toward the enantioselective total synthesis of isoquinoline alkaloids with a grant provided by the Basque Government. After postdoctoral studies in 2002 at the RWTH Aachen (Germany) under the supervision of Prof. Dr. Dieter Enders, where he worked in the total synthesis of natural product (-)-*callistatin A*, he returned in 2002 to the Department of Organic Chemistry II at the Univ. of the Basque Country as assistant professor. Next, Jose L. Vicario was appointed Associate Professor in 2003 and full professor in 2016. He started his career as independent researcher in 2006 and his current research interests deal with the design of new methodologies in asymmetric synthesis, especially asymmetric organocatalysis, and the stereocontrolled synthesis of pharmacologically active compounds. In 1998 and in 2003 respectively received the "Degree Award" and the "Doctorate Award" given by the Univ. of the Basque Country. In 2009 Prof. Jose L. Vicario received the "Lilly Lecture Award" granted by the Spanish Royal Society of Chemistry and Lilly and in 2016 he was awarded the "Ribas Medal" by the Organic Chemistry Division of the RSEQ. Prof. Vicario is coauthor of a total of 90 articles, 4 books and 11 book chapters. He has participated as researcher in a total of 26 projects funded by different public administrations and obtained in concurrent public calls (10 of them as PI). Prof. Vicario has codirected 17 PhD theses, 20 Master theses and 5 Degree theses and 9 other related academic reports (tesina, DEA, etc.). Jose L. Vicario has also been invited to give lectures and conferences in



several international and national scientific meetings (15) and in Universities and research centers (10). He is also fellow of the Spanish Royal Society of Chemistry (since 2001) of the American Chemical Society (since 2006) and of the International Society of Heterocyclic Chemistry (since 2015)

Part C. RELEVANT MERITS

C.1. Publications (including books)

Ten selected articles (Last 10 years)

- 1.- Villar, L.; Uria, U.; Martinez, J. I.; Prieto, L.; Reyes, E.; Carrillo, L.; Vicario, J. L. "Enantioselective Oxidative (4+3) Cycloaddition between Allenamides and Furans through Bifunctional H-bonding/Ion Pairing Interactions"
Angew. Chem. Int. Ed. **2017**, Accepted article DOI: 10.1002/anie.201704804
- 2.- Orue, A.; Uria, U.; Roca-Lopez, D.; Delso, I.; Reyes, E.; Carrillo, L.; Merino, P.; Vicario, J. L. "Racemic Hemiacetals as Oxygen-Centered Pronucleophiles Triggering Cascade 1,4-Addition/Michael Reaction through Dynamic Kinetic Resolution under Iminium catalysis. Reaction Development and Mechanistic Insights"
Chem. Sci. **2017**, 8, 2904-2913.
- 3.- Roca-Lopez, D.; Uria, U.; Reyes, E.; Carrillo, L.; Jorgensen, K. A.; Merino, P.; Vicario, J. L. "Mechanistic Insights into the Mode of Action of Bifunctional Pyrrolidine-Squaramide-Derived Organocatalysts"
Chem. Eur. J. **2016**, 18, 884-889.
- 4.- Riaño, I.; Diaz, E.; Uria, U.; Reyes, E.; Carrillo, L.; Vicario, J. L. "Organocatalytic Enantio- and Diastereoselective Synthesis of 3,5-Disubstituted Prolines"
Chem. Commun. **2016**, 52, 2330-2333.
- 5.- Orue, A.; Uria, U.; Reyes, E.; Carrillo, L.; Vicario, J. L. "Catalytic Enantioselective [5+2] Cycloaddition between Oxidopyrylium Ylides and Enals under Dienamine Activation"
Angew. Chem. Int. Ed. **2015**, 54, 3043-3046 (Highlighted in *Synfacts* **2015**, 11, 433).
- 6.- Prieto, L.; Talavera, G.; Uria, U.; Reyes, E.; Vicario, J. L.; Carrillo, L. "Trienamine Activation through Unconjugated Dienals: Organocatalytic Enantioselective Remote Functionalization of Alkenes"
Chem. Eur. J. **2014**, 20, 2145.
- 7.- Talavera, G.; Reyes, E.; Vicario, J. L.; Carrillo, L.; Uria, U. "Using Conveniently Designed α -Amino Ketones in Michael Reactions under Iminium Catalysis: Enantioselective Synthesis of γ -Lactams and γ -Amino- δ -keto Esters"
Adv. Synth. Catal. **2013**, 355, 653
- 8.- Fernandez, M.; Uria, U.; Vicario, J. L.; Reyes, E.; Carrillo, L. "Enantioselective Conjugate Addition of Donor-Acceptor Hydrazones and α,β -Unsaturated Aldehydes through Formal Diaza-Ene Reaction: Access-1,4-Dicarbonyl Compounds"
J. Am. Chem. Soc. **2012**, 134, 11872. Highlighted in *Synfacts* **2012**, 1147.
- 9.- Talavera, G.; Reyes, E., Vicario, J. L., Carrillo, L. "Cooperative dienamine/hydrogen-bonding catalysis: enantioselective formal [2+2] cycloaddition of enals with nitroalkenes"
Angew. Chem. Int. Ed. **2012**, 51, 4104. (Highlighted in *Synfacts* **2012**, 674 and in *Angew. Chem. Int. Ed.* **2012**, 51, 9734.
- 10.- Vicario, J. L.; Reboredo, S.; Badía, D.; Carrillo, L. "Organocatalytic Enantioselective [3+2] Cycloaddition of Azomethine Ylides and α,β -Unsaturated Aldehydes"
Angew. Chem. Int. Ed. **2007**, 46, 5168. (Highlighted in *Synfacts* **2007**, 873).

Books and Book chapters (Last 10 years)

- 1.- Vicario, J. L.; Badía, D.; Carrillo, L.; Reyes, E.; Ruiz, N. "New methods for the Asymmetric Synthesis of Piperidines and Pyrrolidines."
Targets in Heterocyclic Systems - Chemistry and Properties. Società Química Italiana, Urbino, **2008**, Vol. 12, pp 302-348. (Highlighted in *J. Am. Chem. Soc.* **2009**, 131, 18572)
- 2.- Vicario, J. L.; Badía, D.; Carrillo, L. " β -Nitroacroleine dimethyl acetal"
Encyclopedia of Reagents for Organic Synthesis (e-EROS). Paquette, L.; Fuchs, S. Eds. Wiley and Sons, Weinheim (Germany), **2009**
- 3.- Vicario, J. L.; Badía, D.; Carrillo, L.; Reyes, E. "Iminium activation in catalytic enantioselective conjugate additions"
Asymmetric Conjugate Reactions. Córdoba, A. Ed. Wiley & Sons, **2010**, pp 219-293
- 4.- Vicario, J. L.; Badía, D.; Carrillo, L.; Reyes, E.
Organocatalytic Enantioselective Conjugate Additions, RSC Publishing, **2010**.



- 5.- Reyes, E.; Uria, U.; Carrillo, L.; Vicario, J. L. "Organocatalytic Asymmetric Nucleophilic Addition to Electron Deficient Alkenes"
Comprehensive Organic Synthesis II. Molander, G.; Knochel, P. Eds. Elsevier, **2014**, Vol. 4, pp 119-188.
- 6.- Reyes, E.; Uria, U.; Carrillo, L.; Vicario, J. L. "Catalytic enantioselective Michael reactions"
Organic Reactions. Denmark, S. E. Ed. Wiley & Sons, **2016**, Vol. 89, pp 1-898

C.2. Research projects and grants (Last ten years)

- 1.- Subvención General a Grupo de Investigación del Sistema Universitario Vasco
Funding Organization: Gobierno Vasco. (IT908-16)
Principal Investigator: Jose Luis Vicario.
From 01/01/2016 to 31/12/2021. Total Budget: 333.104 €
- 2.- Uso de la tensión de anillo en organocatálisis enantioselectiva. Oportunidades para descubrir nueva reactividad
Funding Organization: MINECO (CTQ2014-42107-P)
Principal Investigator: Jose Luis Vicario.
From 01/01/2015 to 31/12/2017. Total Budget: 168.000 €
3. Nuevos patrones de reactividad en organocatálisis asimétrica: síntesis estereocontrolada de carbo- y heterociclos de elevada complejidad estructural
Funding Organization: Ministerio de Ciencia e Innovación (CTQ2011-22790)
Principal Investigator: Jose Luis Vicario.
From 01/01/2012 to 31/12/2014. Total Budget: 126.000 €
4. "Organocatalysis - ORCA"
Funding Organization: EU-FP7. (COST Action CM0905)
Principal Investigator: Rainier Mahrwald
From 01/12/2009 to 31/6/2014. Total Budget: 429.355 €
5. Subvención General a Grupos Consolidados del Sistema Universitario Vasco
Funding Organization: Gobierno Vasco (IT328-10)
Principal Investigator: Jose Luis Vicario.
From 01/01/2010 to 31/12/2015. Total Budget: 335.000 €
6. La Organocatálisis como Metodología de Producción para la Industria Química con Reacciones Promovidas por Catalizadores Carentes de Metales y en Medio Acuoso
Funding Organization: Diputación Foral de Bizkaia (DIPE08/03)
Principal Investigator: Jose Luis Vicario.
From 01/01/2009 to 31/12/2010. Total Budget: 35.500 €
- 7.- Procesos organocatalíticos: Hacia una nueva cultura de producción para el desarrollo sostenible de la industria química.
Funding Organization: Cátedra UNESCO (UNESCO06/06)
Principal Investigator: Jose Luis Vicario
From 01/01/2007 to 31/12/2008. Total Budget: 31.250 €
- 8.- Challenging organic syntheses inspired by nature From natural products to drug discovery (NatChemDrugs).
Funding Organization: EU-FP7. (COST Action CM1407)
Principal Investigator: Bruno Botta
From 16/05/2015 to 15/03/2019.. Total Budget: 346.000 €
- 9.- Cicloadiciones [3+2] Organocatalíticas Asimétricas: Desarrollo y Aplicaciones.
Funding Organization: Ministerio de Ciencia y Tecnología (CTQ2008-00136/BQU)
Principal Investigator: M. Dolores Badía
From 01/10/2008 to 01/10/2011. Total Budget: 97.000 €
- 10.- Red de Excelencia en Catálisis Asimétrica.
Funding Organization: Ministerio de Economía y Competitividad (CTQ2014-55571-REDT)
Principal Investigator: Jose M^a Saa
From 16/05/2015 to 15/03/2019. Total Budget: 10.000 €

C.4. Patents

- 1.- Vicario, J. L.; Badía, D.; Carrillo, L. "Síntesis catalítica asimétrica de pirrolidinas polisustituidas ópticamente activas" Application Number: P200701196. Country: Spain. Date: 25-06-09. Organization: Universidad del País Vasco



C.5. Invited lectures in Congresses and Symposia

- 1.- Spanish-Japanese Symposium on Modern Synthetic Methodology (Gijón, Spain) 2017
- 2.- Antonio González Seminar (Tenerife, Spain) 2016.
- 3.- XXVI Reunión Bienal de Química Orgánica (Huelva, Spain), 2016.
- 4.- Challenging Organic Synthesis Inspired by Nature - from Natural Products Chemistry to Drug Discovery (Roma, Italy), 2015.
- 5.- 1st DOMINOCAT Symposium (Aachen, Germany), 2015.
- 6.- ORCA COST Action Meeting (Palermo, Italy), 2014
- 7.- V Jornadas de la Red Española de Catálisis Asimétrica (Palma de Mallorca, Spain), 2014
- 8.- II U.S.-Spain Workshop on asymmetric chemical synthesis and catalysis (Northwestern University, Chicago, USA), 2013
- 9.- IV Jornadas Red Española de Catálisis Asimétrica (Palma de Mallorca, Spain), 2012
- 10.- ORCA COST Action Summit (Berlin, Germany) 2011
- 11.- II China-Spain Bilateral Symposium on Catalysis. (Tarragona, Spain), 2010
- 12.- 1st U.S.-Spain Workshop on asymmetric synthesis and catalysis, (Benicassim) 2010
- 13.- Prometeo Workshop: Perspectives in asymmetric and organometallic synthesis (Valencia,) 2010
- 14.- I Young Investigators Workshop (Liblice, Czech Republic), 2009
- 15.- XXXII Meeting of the Spanish Royal Society of Chemistry (Oviedo, Spain), 2009

C.6. Invited lectures at research centers and Universities

RWTH Aachen (Germany), 2001, CIETUS (Salamanca), 2006. ICIQ, (Tarragona) 2008 and 2016. Lilly, (Alcobendas) 2010, Univ. Autónoma de Madrid, 2011, Janssen-Cilag (Toledo), 2013. CINQUIMA (Valladolid), 2013. U. Alicante, 2013. Univ. Barcelona, 2015.

C.7. Supervised PhD Theses (Last 10 years)

- 1.- Nagore Zabaleta Alonso "Organocatalytic Approaches to the Asymmetric Synthesis of N-Heterocycles: From Brønsted Acid to Vinylogous Iminium" 16/06/2017 (International PhD).
- 2.- Laura Villar Arango "Asymmetric Transformations under Chiral Brønsted Acid Catalysis: (4+3) Cycloaddition and Allylboration of Imines" 19/05/2017 (International PhD).
- 3.- Eduardo Sanchez Diez "Covalent Organocatalysis for the Development of New Methodologies in Asymmetric Synthesis" 03/05/2017 (International PhD).
- 4.- Liher Prieto Aretxabaleta "Unconventional Reactivity Patterns in Asymmetric Organocatalytic Cycloaddition Reactions" 31/03/2017 (International PhD).
- 5.- Iker Riaño Castela "Michael Initiated Organocatalytic Cascade Reactions" 20/07/2016
- 6.- Ane Orue Dañobeitia "6-Hydroxy-2H-pyran-3(6H)-one Derivatives as Versatile Reagents in Organocatalytic and Enantioselective Reactions" 12/12/2014 (International PhD).
- 7.- Iratxe Ugarriza Ojanguren "Aproximación a Inhibidores del Virus de la Hepatitis C via Cicloadición 1,3-Dipolar Organocatalítica" 30/09/2014 (International PhD).
- 8.- Jose Ignacio Martínez Fernández "Approaching to sustainable chemistry through organocatalytic cascade reactions" 15/03/2013 (International PhD)
- 9.- Garazi Talavera Urquijo "Asymmetric organocatalytic cascade reactions" 13/12/2012 (International PhD).
- 10.- Naiara Fernández Hernández "Activation of Enals through Aminocatalysis in Enantioselective Processes. (3+2) Cycloadditions and Michael-Henry cascades" 26/10/2012 (International PhD).
- 11.- Maitane Fernández Chento "Hydrazides and Hydrazones as versatile Michael-donors for iminium-catalyzed conjugate additions" 18/09/2012 (International PhD, *PhD Award*)
- 12.- Silvia Reboredo Angulo "Cicloadiciones [3+2] organocatalíticas enantioselectivas con iluros de azometino" 4/07/2011.
- 13.- Uxue Uria Pujana. "Reacciones aza-Michael organocatalíticas asimétricas" 27/10/2009 (*PhD Award*).
- 14.- Nerea Ruiz Gallardo "Síntesis asimétrica de derivados pirrolidínicos. Auxiliares quirales vs organocatálisis asimétrica." 04/07/2008.

C.8. Awards

- 1.- Ignacio Rivas Medal awarded by the Organic Division of RSEQ
- 2.- *Lilly* Lecture Award (2009) by Lilly and RSEQ (2016)
- 3.- PhD Award by the Universidad del País Vasco. (1998)
- 4.- Degree Award by the Universidad del País Vasco. (2003-04).