Fecha del CVA	03/05/2024

Parte A. DATOS PERSONALES

Nombre	Alfonso Carlos		
Apellidos	Valdés Gómez		
Sexo	No Contesta	Fecha de Nacimiento	
DNI/NIE/Pasaporte			
URL Web			
Dirección Email			
Open Researcher and Contributor ID (ORCID)	0000-0002-6246-2994		

A.3. Formación académica

Grado/Master/Tesis	Universidad / País	Año
Doctor en Química	Universidad de Oviedo	1992

Parte B. RESUMEN DEL CV

SCIENTIFIC CONTRIBUTIONS

Coauthor of more than 80 articles in top peer-reviewed journals and several book chapters. Among the publications can be highlighted Nature Chemistry (1), Angew. Chem. (15), J. Am. Chem, Soc. (5), Chem. Commun. (6), Chem. Eur. J. (13), Org, Lett. (11), Adv. Synth. Catal (5).

Quality Indexes of the Scientific Production (WOS)

Publications: 89; H index: 36 (Web of Science 19-10-2023); Total number of citations: 4566 (average 50,73 per item)

Researcher in **over 10 research projects** supported by public funds. As a **principal investigator**, I have led **three research projects** from the National Plan of Spain FECYT (two of which are ongoing), a regional research project in the concerted network plan with companies (currently ongoing), and a project from the Ramón Areces Foundation.

Current scientific interests are devoted to new applications of unstabilized diazo compounds and include the development of new methodologies for transition metal-catalyzed C-C and C-X bond formation, the discovery of new transition metal-free transformations, and the design of reactions in cascade and multicomponent oriented to the generation of diversity and molecular complexity. Our contributions in recent years include the discovery of new applications for N-sulfonylhydrazones in organic synthesis, which have had a significant impact on the scientific community and have generated renewed interest in this area of research. Currently, some of the methodologies developed, specifically Pd-catalyzed cross-couplings with N-tosylhydrazones and reductive couplings of boronic acids and N-sulfonylhydrazones, are routinely used in academic and industrial laboratories for their synthetic efforts.

Recognized Six-year Research Periods (Sexenios de Investigación): **5** Date of the last (06/06/2018).

TRANSFER ACTIVITIES

IP in several contracts with chemical companies. In the last years, I have maintained a continuous collaboration with the startup chemical company BioAcores – via research contracts and a research project financed by the Regional Government of Asturias.

TRAINING CAPACITY

Director or codirector of **11 PhD thesis** (7 in the last 10 years). Most former students have professional activities related to chemistry research:

Carlos Mateos Gutierrez (2004) Senior researcher at Lilly-Spain (Alcobendas). Alejandro Fernández Hernández (2004) Senior researcher at Idonial-Gijón (Asturias). Patricia Moriel Blanco (2008) Secondary school teacher. Agustín Jiménez Aquino (2009) Senior researcher Villalpharma (Murcia). María Tomás Gamasa (2011) Ramón y Cajal researcher at Universidad de Santiago de Compostela. Lucía Florentino Rico (2013) Senior researcher at Idonial-Avilés (Asturias). María Escribano Santamarina (2015) Researcher at Arcelor-Avilés. María del Carmen Pérez Aguilar (2015) Scientist in PharmaMar (Madrid). Raquel Barroso Reyes (2017) Secondary school teacher. Miguel Paraja Ramos (2018) Researcher at Exeger

(Stockholm). Manuel Plaza Martínez (2018) Margarita Salas Jr. researcher at University of Oviedo

Tutor of more than 10 master thesis and over 50 end of degree thesis; Tutor of **visiting students** from México and Europa (Erasmus+); Member of international PhD commitees.

OTHER MERITS

Participation in scientific and technical committees

Committee title and position: President of the "Comité Experimentales II del Programa de Evaluación del Profesorado para la contratación (PEP)"

Affiliation entity: ANECA; Entity type: State Agency of Spain; Start and end date: 01/01/2022 - 31/12/2024

Committee title and position: Member of the "Comité Experimentales II del Programa de Evaluación del Profesorado para la contratación (PEP)"

Affiliation entity: ANECA; Entity type: State Agency of Spain; Start and end date: 01/01/2021 - 31/12/2021

Committee title and position: Member of the evaluation commission of the Ramón y Cajal Program - Chemistry area.

Start and end date: 04/23/2018 - 04/25/2018

Committee title and position: Evaluator of Proyects for Agencia Estatal de Investigación

Member of the The ORFEO-CINQA Research Network: a Virtual Center of Organometallic Chemistry that brings together 12 research groups from across Spain and UK to collaboratively address the solution of problems shading the borders between the different areas of chemistry.

Parte C. LISTADO DE APORTACIONES MÁS RELEVANTES

C.1. Publicaciones más importantes en libros y revistas con "peer review" y conferencias

AC: Autor de correspondencia; (nº x / nº y): posición firma solicitante / total autores. Si aplica, indique el número de citaciones

1 **Artículo científico**. Manuel Plaza; Stefano Parisotto; Carlos Valdés. 2018. Heterocyclization and Spirocyclization Processes Based on Domino Reactions of N-Tosylhydrazones and Boronic Acids Involving Intramolecular Allylborylations of Nitriles.Chemistry – A European Journal. 24-55, pp.14836-14843. WOS (8)

2 **Artículo científico**. Manuel Plaza; Miguel Paraja, Lucía Florentino; Lucía Florentino; (4/4) Carlos Valdés (AC). 2019. Domino Synthesis of Benzo-Fused gamma,delta-Unsaturated Ketones from 2-Alkenylboronic Acids and N-Tosylhydrazone-Tethered Benzonitriles.Organic Letters. ACS. 21-3, pp.632-632. WOS (12)

3 **Artículo científico**. Lucia Florentino; Lucía López; Raquerl Barroso; María P Cabal; (5/5) Carlos Valdés (AC). 2021. Synthesis of Pyrrolidines by a Csp3-Csp3/Csp3-N Transition Metal-free Domino Reaction of Boronic Acids with gamma-Azido-N-Tosylhydrazones.Angewandte Chemie International Edition. Wiley VCH. 60-3, pp.1273-1280. WOS (11)

4 **Artículo científico**. Lucía López; María Paz Cabal; (3/3) Carlos Valdés (AC). 2022. Construction of NH-Unprotected Spiropyrrolidines and Spiroisoindolines by [4+1] Cyclizations of γ-Azidoboronic Acids with Cyclic N-Sulfonylhydrazones. Angewandte Chemie International Edition. Wiley. pp.e202113370. WOS (1)

5 **Artículo científico**. F. Piedra, Helena; Valdés, Carlos; Plaza, Manuel. 2024. Synthesis of Vinyl and 1,3-Dienyl Sulfones Enabled by Photochemical Excitation of Halogen-Bonding Complexes. Advanced Synthesis & Catalysis. n/a-n/a. https://doi.org/10.1002/adsc.202301381

6 **Artículo científico**. Helena; Victoria; Carlos; Manuel. 2023. Photochemical Halogen-Bonding Assisted Carbothiophosphorylation Reactions of Alkenyl and 1,3-Dienyl Bromides. Chemical Science. RSC. https://doi.org/10.1039/D3SC05263J

7 **Artículo científico**. Helena; Carlos; Manuel. 2023. Shining light on halogen-bonding complexes: a catalyst-free activation mode of carbon–halogen bonds for the generation of carbon-centered radicals. Chemical Science. RSC. 14, pp.5545-5568.

8 **Artículo científico**. Valdés-Maqueda, Álvaro; López, Lucía; Plaza, Manuel; Valdés, Carlos. 2023. Synthesis of substituted benzylboronates by light promoted homologation of boronic acids with N-sulfonylhydrazones. Chemical Science. The Royal Society of Chemistry. 14, pp.13765-13775.

9 **Artículo científico**. Noe Fanjul-Monteseirín; Judith Martín; Carlos Valdés; Carmen Concellón; Vicente del Amo. 2020. Broadening the Scope of Steroidal Scaffolds: The Umpolung of a BisPrimary Amine Precatalyst for the Insertion of CO2 into Epoxides. Organic Letters. ACS. 22, pp.6988-6992.

10 **Artículo científico**. Raquel Barroso; María Paz Cabal; Azucena Jiménez; Carlos Valdés. 2020. Cascade and multicomponent synthesis of structurally diverse 2-(pyrazol-3-yl)pyridines and polysubstituted pyrazoles. Organic & Biomolecular Chemistry. 18-8, pp.1629-1636. WOS (4)

11 **Artículo científico**. Patricia Fernández; Carlos Valdés; Francisco J. Fañanás; Félix Rodríguez. 2019. Unusual Reactivity of Isoquinolinones Generated by Silver-Catalyzed Cycloisomerizations of Imines Derived from ortho-Alkynylsalicylaldehydes. Journal of Organic Chemistry. ACS. 84-6, pp.3184-3191. WOS (9)

12 **Artículo científico**. Raquel Barroso; Miguel Paraja; MP Cabal; (4/4) Carlos Valdés (AC) (AC). 2017. Synthesis of 1,1-Disubstituted Indenes and Dihydronaphthalenes through C-C/C-C Bond-Forming Pd-Catalyzed Autotandem Reactions.Organic Letters. ACS. 19, pp.4086-4089. WOS (18) https://doi.org/10.1021/acs.orglett.7b01870

13 **Artículo científico**. Miguel Paraja; (2/2) Carlos Valdés (AC) (AC). 2017. Pd-Catalyzed Autotandem Reactions with N-Tosylhydrazones. Synthesis of Condensed Carbo- and Heterocycles by Formation of a C?C Single Bond and a C?C Double Bond on the Same Carbon Atom. Organic Letters. ACS. 19, pp.2034-2037. WOS (26) https://doi.org/10.1021/acs.orglett.7b00613

14 **Capítulo de libro**. 2023. Homologation of Boronic Acides and Organoboranes by Transition-Metal-Free reactions with Diazo Compounds and N-Sulfonylhydrazones. Homologation reactions. Wiley-VCH. pp.467-510.

C.3. Proyectos o líneas de investigación

1 **Proyecto**. Generación de complejidad molecular tridimensional mediante síntesis orgánica y catálisis. Agencia Estatal de Investigación. (Universidad de Oviedo). 01/09/2023-31/08/2026. 293.750 €. Investigador principal. Investigador principal

2 **Proyecto**. El ácido glicirretínico como plataforma para el descubrimiento de nuevos agentes antitumorales y antivirales semi-sintéticos. FICYT. (Universidad de Oviedo). 01/12/2021-30/11/2023. 97.639,55 €. Investigador principal.

3 **Proyecto**. Estrategias en Química Orgánica Sintética y Catálisis para la Generación de Diversidad y Complejidad Molecular. Agencia Estatal de Investigación. (Universidad de Oviedo). 07/06/2020-31/12/2022. 230.000 €. Investigador principal.

4 **Proyecto**. Síntesis química aplicada a la preparación de moléculas de interés en biomedicina IDI/2018/000231. FICYT. (Universidad de Oviedo). 01/01/2018-31/12/2020. 182.000 €.

5 **Proyecto**. Desarrollo de nevos metodos sintéticos para la construcción eficiente de complejidad molecular: aplicaciones en la sintesis de moleculas de alto valor añadido. Ministerio de Economía y Competitividad. (Universidad de Oviedo). 01/01/2017-29/12/2019. 254.100 €. Investigador principal.

6 **Proyecto**. Nuevos Métodos de Síntesis Química para la Construcción Eficiente y Selectiva de Compuestos de Alto Valor Añadido.. Ministerio de Economía y Competitividad. (Universidad de Oviedo). 01/01/2014-31/12/2016. 375.000 €.

7 **Contrato**. Extracción de compuestos bioactivos presentes en Ilex paraguariensis (yerba mate) BIOACORES. 01/10/2021-01/04/2022. 6.000 €.

8 **Contrato**. Identificación y elucidación estructural de los componentes bioactivos de un extracto de la piel de la manzana BIOACORES. 07/07/2020-07/07/2021. 12.000 €.

9 **Contrato**. “Valorización de residuos de la industria agroalimentaria: Aislamiento y caracterización de compuestos bioactivos” BIOACORES. 01/06/2018-01/06/2019.

10 **Contrato**. Fluorinated aromatic and heteroaromatic compounds by cross-coupling reactions with sulfonylhydrazones Janssen R&D. 12/09/2011-12/09/2013. 90.625 €.

C.4. Actividades de transferencia de tecnología/conocimiento y explotación de resultados

Patente de invención. Carlos Valdés; Alberto Ballesteros; Miguel Bayod. EP19382530.4. Apple waste extraction process España. 30/12/2020. Bioacores.