DATE	17/04/2019

Part A. Personal Information

Surname(s)	Ortiz Mellet	
Forename	Carmen	
Social Security, Passport, ID number	28.455447P	
Sex	Female	
Age	61	
Researcher codes	WoS Researcher ID *(*)*	C-993-2011
	SCOPUS Author ID*(*)*	ID 603444098
	Open Researcher and Contributor ID (ORCID)	http://orcid.org/0000-0002-7676-7721

(*) At least one of these is mandatory

A.1. Current position

Post/ Professional Category	Professor of Organic Chemistry	
UNESCO Code	2306 (Organic Chemistry); 230606 (Carbohydrates)	
Key Words	carbohydrates; iminosugars; glycomimetics; supramolecular chemistry; biological chemistry	
Name of the University/Institution	University of Seville	
	Department/Centre	Organic Chemistry/Faculty of Chemistry
	Full Address	C/ Profesor García Gonzalez 1, 41012-Seville (Spain)
	Email Address	mellet@us.es
	Phone Number	954 559806
Start date 2008		

A.2. Education *(title, institution, date)*

Year	*University*	*Degree*	*Title*
		First degree	
1979	*Seville*	*Masters (if appropriate)*	*Master Science in Chemistry*
1984	*Seville*	*PhD*	*PhD in Chemistry*

A.3. Indicators of Quality in Scientific Production *(See the instructions)*

Total number of citations: 5849
Average number of citations during last five years: 3333 (2424, excluded self citations)
Total number of publications: 223
h-index: 44.
Thesis supervised: 21 (+ 3 in preparation).

Part B. Free Summary of CV *(Max. of 3.500 characters, including spaces)*

Carmen Ortiz Mellet received her Ph. D. degree in Chemistry from the University of Seville (Spain) in 1984, where she was appointed Tenure Professor of Organic Chemistry in 1987. In 1990 and 1995 she joined the group of Professor Jacques Defaye (Centre d'Etudes de Grenoble, France) to work in the synthesis of complex thiooligosaccharides and pursue synthetic and supramolecular studies on cyclodextrins. Since 1998 she is responsible for the Carbohydrate Bioorganic Chemistry Group at the University of Seville, being promoted to Full Professor in 2008. In 2014 she received the research prize "FAMA" of the University of Seville for her trajectory in the area of Natural Sciences. She has participated as Vice-chair of the panel of evaluators of the European H2020-FETOPEN calls (2015-16 and 2016-17). Ongoing projects include the implementation of the concept of multivalency to glycosidase inhibition, the development of sp^2-iminosugars as carbohydrate chemical mimics and their application to the design of pharmacological chaperones for the treatment of genetic and age-related protein folding diseases (lysosomal storage disorders, Parkinson and Alzheimer), the synthesis of

glycolipid and glycopeptide mimetics for the glycotherapy of cancer, inflammation, and infection diseases and the elaboration of glycocarriers for site-specific delivery of therapeutics. She has supervised 21 PhD Thesis, authored more than 200 publications and is co-inventor of 16 patents. A pharmacological chaperone candidate developed in the group is currently being assayed in a preclinical study for the treatment of the neurodegenerative lysosomal storage disorder GM1-gangliosidosis with the support of the company Genzyme (Sanofi group).

Part C. Relevant accomplishments

C.1. Publications

1.- P. Compain, C. Decroocq, J. Iehl, M. Holler, D. Hazelard, T. Mena Barragán, **C. Ortiz Mellet**, J.-F. Nierengarten. **2010.** Glycosidase Inhibition with Fullerene Iminosugar Balls: A Dramatic Multivalent Effect. *Angew. Chem. Int. Ed.*, 49, 5753-5756. FI*:* 12.730; doi: **10.1002/anie.201002802.**

2.- R. Rísquez-Cuadro, J. M. García Fernández, J.-F. Nierengarten, **C. Ortiz Mellet**. **2013.** Fullerene-sp^2-iminosugar balls as multimodal ligands for lectins and glycosidases: a mechanistic hypothesis for the inhibitory multivalent. *Chem. Eur. J.*, 19, 16791-16803. *FI:* 5.696; doi: **10.1002/chem.201303158**.

3.- Y. Brissonnet, **C. Ortiz Mellet**, S. Morandat, M. I. Garcia-Moreno, D. Deniaud, S. Matthews, S. Vidal, S. Sestak, K. El Kirat, S. Gouin. **2013.** Topological effects and binding modes operating with multivalent imino-sugar-based glycoclusters and mannosidases. *J. Am. Chem. Soc.*, 135, 18427-18435. *FI:* 11.444; doi: **10.1021/ja406931w.**

4.- A. Siriwardena, M. Khanal, A. Barras, O. Bande, T. Mena-Barragán, **C. Ortiz Mellet**, J. M. Garcia Fernández, R. Boukherroubb, S. Szunerits. **2015**. Unprecedented inhibition of glycosidase-catalyzed substrate hydrolysis by nanodiamond-grafted Oglycosides. *RSC Adv.*,5, 100568-100578. FI*:* 3.840. doi: **10.1039/C5RA16087A.**

5.- F. Stauffert, A. Bodlenner, T. M. N. Trinh, M. I. García-Moreno, **C. Ortiz Mellet**, J.-F. Nierengarten, P. Compain. **2016.** Understanding multivalent effects in glycosidase inhibition using *C*-glycoside click clusters as molecular probes. *New J. Chem. 40*, 7421-7430. FI: 3.277. doi: **10.1039/ C6NJ01311B.**

6.- M. Abellán Flos, M. I. García Moreno, **C. Ortiz Mellet**, J. M. García Fernández, J.-F. Nierengarten, S. P. Vincent. **2016.** Potent glycosidase inhibition with heterovalent fullerenes: unveiling the binding modes triggering multivalent inhibition**.**. *Chem. Eur. J.*, *22*, 11450-1146. FI: 5.771. doi*:* **10.1002/chem.201601673.**

7.- M. I. García-Moreno, F. Ortega-Caballero, R. Rísquez-Cuadro, **C. Ortiz Mellet**, J. M. García Fernández. **2017.** The Impact of Heteromultivalency in Lectin Recognition and Glycosidase Inhibition: An Integrated Mechanistic Study. *Chem. Eur. J. 23*, 6295-6304*.* FI: 5.771. doi*:* **10.1002/chem.201700470.**

8.- T. M. N. Trinh, M. Holler, J. P. Schneider, M. I. García-Moreno, J. M. García Fernández, A. Bodlenner, P. Compain, **C. Ortiz Mellet,** J.-F. Nierengarten. **2017**. Construction of giant glycosidase inhibitors from iminosugar-substituted fullerene macromonomers. *J. Mater. Chem. B*, *5*, 6546-6556. FI: 4,872; doi*:* **10.1039/c7tb01052d.**

9.- C. Ortiz Mellet, J.-F. Nierengarten, J. M. García Fernández. **2017**. Multivalency as an action principle in multimodal lectin recognition and glycosidase inhibition: a paradigm shift driven by carbon-based glyconanomaterials. *J. Mater. Chem. B*, *5*, 6428-6436. FI: 4,872. doi*:* **10.1039/c7tb00860k.**

10.- J.-F. Nierengarten, J. P. Schneider, T. Minh, N. Trinh, A. Joosten, M. Holler, M. L. Lepage, A. Bodlenner, I. Garcia-Moreno, **C. Ortiz Mellet**, P. Compain. **2018**. Giant Glycosidase Inhibitors: First- and Second-Generation Fullerodendrimers with a Dense Iminosugar Shell. *Chem. Eur. J., 24,* 2483-2492. FI: 5.317. doi***: 1*0.1002/chem. 201705600**

C.2. Research Projects and Grants

1.- Ref. SAF2010-15670. Glycobiotics, glycodrugs and glycotransporters: Applications in Nutrition and Biomedicine. Ministerio de Ciencia e Innovación (MEC). **Carmen Ortiz Mellet** . March 2010 - March 2013. 157.300,00 €.

2.- sp^2 Iminosugars as chaperones: a general strategy for the treatment of lysosomal storage disorders. Fundación Ramón Areces. **Carmen Ortiz Mellet**. March 2010 - March 2013. 118.860,00 €.

3.- Ref. PIRSES-GA-2010-269099. Preparación de partículas con fotoreceptores: aplicación bio-analítica para la liberación controlada de fármacos (Fotoliberación). 7º Programa Marco (Marie Curie Actions). **Carmen Ortiz Mellet**.November 2011-October 2014. 186.200,00 €.
4.- Ref. FP7-PEOPLE-2012-CIG Glycodrugs: new strategies for controlling the activity of glycosidase enzymes and their application in therapies for lysosomal storage diseases and cancer (GLYCODRUGS). 7º Programa Marco (Marie Curie Career Integration Grants, CIG. Carmen Ortiz Mellet. **Carmen Ortiz Mellet**. July 2013 - July 2017. 200.000 €.
5.- Ref. SAF2013-44021R. Inhibitors, Chaperones and Nutraceutics based on carbohydrates for biomedical applications in lysosomal storage disorders, cancer and Crohn disease. Ministerio de Economía y Competitividad (MINECO). **Carmen Ortiz Mellet**. January 2014 - December 2016. 217.800,00 €
6.- Ref. SAF2016 76083R. Terapias basadas en glicomiméticos para el tratamiento de enfermedades de plegamiento de proteínas, inflamación y cáncer. Ministerio de Economía y Competitividad (MINECO). **Carmen Ortiz Mellet.** Enero 2017-Diciembre 2019. Cuantía total: 169400 €.
7.- Ref. FQM 1467. Self-assembled nanometric systems for drugs and gene material transport: Aplications in cancer therapies. Junta de Andalucia. **José Manuel García Fernández.** May 2014 - November 2017. 177.744 €.

C.3. Contracts

1.- Development of New products from rice and legume. Chemical Analysis. HERBA RICEMILLS, S.L. **Carmen Ortiz Mellet**. November 2010- June 2012. 143.405,00€.
2 and 3-. Preparation and possible use of cyclodextrin derivatives as muscle relaxants antagonists. FARMHISPANIA S. A. **Carmen Ortiz Mellet**. December 2011 - January 2012. 62.538,90€. and March 2012 - March 2013. 65.665,90€.
4.- INTERCONECTA Experimental development of transformation processes of lignocellulosic biomass. CENTRO DE ANÁLISIS AGROPECUARIO, S.L. -CANAGROSA. **Carmen Ortiz Mellet**. January 2012 - December 2014. 90.000,90€

C.4. Patents and other IPR

1.- J. M. García Fernández, L. E. Atencio Genes, **C. Ortiz Mellet**, J. François, K. de Oliveira Vigier, M. Audemar, J. J. Gálvez Peralta. P**2015**30423, **2015**. Procedure for the preparation of caramels with a high content of prebiotic oligosaccharides. Spain. 30/03/2015. CSIC – Univ. of Seville– CNRS – Univ. of Poitiers
2.- J. M. García Fernández, **C. Ortiz Mellet**, J. A. Sánchez Alcázar, M. de la Mata Fernández. ES/ P**2015**30475, **2015**. Composition for the treatment of lysosomal diseases. Spain. 10/04/2015. CSIC – Univ. de Seville– Univ. Pablo de Olavide
3.- J. M. García Fernández, **C. Ortiz Mellet**, E. Nanba, K. Higaki, Y. Suzuki. ES/P201232024, **2012**, PCT/ES2013/070883**.** Use of bicyclic derivatives of 1-deoxygalactonojirimycin for the treatment of diseases related to mutant human lysosomal beta-galactosidase. Spain. 26/12/2012. CSIC, Univ. of Seville– Tottori Univ. – Univ. of Health and Wefare
4.- P. Alfonso, A. Moya, A. Pino, F. Sánchez, M. Pocoví, P. Giraldo, M. I. García-Moreno, **C. Ortiz Mellet**, J. M. García Fernández. Use of a compound of formula (I) for the treatment of Gaucher disease, pharmaceutical composition, compound of formula (Ib) and method for its preparation. ES/P**2012**30804, **2012.** Spain. 25/06/2012. CIBERER – CSIC – Univ. of Seville– Univ. of Zaragoza – Univ. of Malaga

C.5, C.6, C.7… Other

C.5 Supervised PhD.
1.- Carbohydrate thiocarbamates and thioureas. Synthesis of enantiopure 1,3-O,N-heterocycles, chiral receptors and glycomimetics. José Luis Jiménez Blanco. Universidad de Sevilla. Fecha de lectura: Julio **1996.**
2.- Synthesis of carbamide-bonded pseudooligosaccharides and polyhydroxyindolixzidine-related glycomimetics. Glycosidase inhibition studies. Victor Díaz-Pérez. Univ. of Seville. **1998.**
3.- Design and Synthesis of carbohydrate-based receptors: multivalent cyclodextrins, podands and cyclotrehalans, evaluation of the complexity properties and lectin recognition. Juan Manuel Benito-Hernández. Univ. of Seville. **2001**
4.- Synthesis of calystegine and castanospermine analogs and evaluation of their activity as glycosidase inhibitors . M. Isabel García-Moreno. Univ. of Seville. **2002.**
5.- New methods for the Synthesis and purification of difructose dianhydrides. Enrique Miguel Rubio-Castillo. Univ. of Seville. **2004.**

6.- Synthesis of multivalent cyclodextrins and evaluation of their properties as drug delivery system systems. Marta Gómez-García. Univ. of Seville. **2005**
7.- Synthesis of glycomimetics with pseudoamidic nitrogen in the ring and evaluation of their activity as glycosidase inhibitors. Paula Díaz-Pérez. Univ. of Seville. **2005.**
8.- Carbohydrate-derived receptors for supramolecular interaction studies. David Rodríguez-Lucena. Univ. of Seville. **2006.**
9.- Glycooligomers with pseudoamide bonds and study of their interactions with phosphates. Purificación Bootello-Iglesias Univ. of Seville. **2007.**
10.- Synthesis of multivalent cyclodextrins and evaluation of their properties as drug delivery systems. Marta Gómez-García. Univ. of Seville. **2005**.
1**1.-** Glyconanoestructures based on cyclodextrins for drug and gene delivery transport. Patricia Balbuena-Oliva. Prize to the best PhD Thesis (Chemistry, Univ. Seville). Univ. of Seville. **2008.**
12.- sp^2 Iminosugars as glycosidase inhibitors: Application to the design of pharmacological chaperones for the treatment of Gaucher disease. Matilde Aguilar Moncayo. Prize to the best PhD Thesis (Chemistry, Univ. Seville). Univ. of Seville. **2010**.
13.- Multifunctional platforms based on cyclodextrins: Design of antrax antitoxins and gene vectors. Alejandro Díaz Moscoso. "San Alberto Magno" Prize to the Prize to the best PhD Thesis (Chemistry). Univ. of Seville. **2010**.
14.- Preparation, analysis and evaluation of prebiotic oligosaccharides dfrom fructose and glucose. Elena Suárez Pereira. Univ. of Seville. **2011**.
15.- Self-assembling nanosystems based on cyclodextrins for drug and gene material transport. Alejandro Méndez Ardoy. Univ. of Seville, **2011.**
1**6.-**Synthesis of sp^2 iminosugars and evaluation of their activity as pharmacological chaperones for the treatment of Gaucher, Fabry and gangliosidosis GM1 diseases. Teresa Mena Barragán. Prize to the best PhD Thesis (Chemistry, Univ. Seville). Univ. of Seville, **2013**.
17.-Design of specific inhibitors of glycosidases and their application in cancer therapies: effect of aglycon and multivalency in the affinity of sp^2 iminosugars against enzymes and lectins. Rocío Rísquez Cuadro. Univ. of Seville, **2013**.
18.-Preparation of self-assembling nanosystems from cyclodextrins and calixarenes. Aplications for transport and gene and drug controlled delivery. Laura Gallego Yerga. Prize to the best PhD Thesis (Chemistry, Univ. Seville). Univ. of Seville, **2014**.
19.- Amphiphilic Glycomimetics and glycoligands. Interactions with enzymes, receptors and nucleic acids. Julio Rodríguez Lavado. Univ. of Seville, **2015**.
20.- Glycotherapies for cancer, leishmaniasis and lysosomal storage disorders. Rita Alexandra Gonçalves Pereira. Univ. of Seville, **2016.**
21.- Glycobiotics: Preparation of caramels with functional properties. Loyda Esther Atencio Genes. Universidad de Seville, **2017**

C.6 Selected Prizes and others

1.- Awarded with the researchprize FAMA-University of Seville for the research trajectory in Natural Sciences (2014).
2.- Responsible researcher of the group "Bioorganic Chemistry of Carbohydrates (Cod. FQM 308) financed by the Consejería de Educación y Ciencia de la Junta de Andalucía from May 2001.
3.- PhD supervisor of Tania Fernández Neva, Manuel González Cuesta and Ana Isabel Garbajo
4.- Head of "Servicio de Criogenia de los Servicios Generales de Investigación de la Universidad de Sevilla" (CITIUS, from September 2011).
5.- Reviewer for internationally recognised journals.
6.- Project reviewer forthe Spanish Fondo for the Ministerio de Ciencia e Innovación (MEC) and Ministerio de Economía y Competitividad (MINECO), the Argentinian Fondo for Investigación Científica y Técnica de Argentina (FONCYT), and the French Agence Nationale de la Recherche de Francia (ANR).
7.- Expert reviewer of projects of call H2020-FETOPEN-2014/2015 and Cross-read Vice-chair of European calls H2020-FETOPEN-2015 and H2020-FETOPEN-2016.