MINISTERIO DE CIENCIA E INNOVACIÓN

CURRICULUM VITAE (maximum 4 pages)

AGENCIA ESTATAL DE INVESTIGACIÓN

CV date	24 March 2022

Part A. PERSONAL INFORMATION

First and Family name	Faustino Mollinedo		
ID number	02494012F	Age	66 years
Researcher codes	Open Researcher and Contributor ID (ORCID**)	0000-0002-4939-2434	
	SCOPUS Author ID (*)		
	WoS Researcher ID (*)	M-9024-2016	

(*) Optional; (**) Mandatory

A.1. Current position

Name of University/Institution	Centro de Investigaciones Biológicas Margarita Salas / Consejo Superior de Investigaciones Científicas (CSIC)				
Department	Department of Molecular Biomedicine				
Address and Country	Ramiro de Maeztu 9, Madrid E-28040, Spain				
Phone number	+34 918373112	E-mail	fmollin@cib.csic.es		
Current position	Professor (CSIC) /Profesor de Investigación (CSIC)			From	2002
Key words	Cell death, lipid rafts, neutrophils, neutrophil granules, neutrophil exocytosis, antitumor ether lipids, anticancer drugs, therapeutic targets, drug discovery, antitumor drug, mechanism of action, cell signaling, apoptosis, death receptor, cancer, cancer and apoptosis, inflammation, *Leishmania*.				

A.2. Education

PhD, Licensed, Graduate	University	Year
PhD (Chemistry)	Universidad Complutense de Madrid	1982
Graduate (Licenciatura) (Chemistry)	Universidad Complutense de Madrid	1977

Proficiency in English (University of Michigan, 1978)

A.3. General indicators of quality of scientific production *(see instructions)*
Sexenios: 7 (last segment: 2014-2019); Quinquenios: 8 (last segment: 2014-2018).
***Bibliometric indicators (March 2022) - Web of Science (WoS) and Google Scholar*:**
- Named in the world's top 2% of Scientists List in 2020 (Ioannidis JPA, Boyack KW, Baas J (2020) Updated science-wide author databases of standardized citation indicators. PLoS Biol 18(10): e3000918); and 2021 (Baas J, Boyack K, Ioannidis JPA (2021) August 2021 data-update for "Updated science-wide author databases of standardized citation indicators". Mendeley Data, V3). In fact, he ranks in the world's top 0.8% and 0.4% of the most-cited scientists for career and single year (2020), respectively.
- H-index: 56 (WoS); 66 (Google Scholar)
- Total number of peer-reviewed articles: 234 (WoS); 213 (PubMed)
- Number of book chapters: 18 (6 since 2010)
- Total number of citations: 16652 (WoS); 21887 (Google Scholar)
- Average citations per item: 71.16 (WoS)
- Number of articles with over 100/200 citations: 24/7 (WoS); 42/12 (Google Scholar)
- Supervised PhD theses: 21 in total (7 awarded as best PhD thesis of the year); 13 since 2010 (3 awarded as best PhD thesis of the year)

Part B. CV SUMMARY *(max. 3500 characters, including spaces)*
Faustino Mollinedo received his Ph.D. in Chemistry in 1982 (Complutense University, Madrid). He then moved to Dartmouth Medical School in Donald L. Schneider's laboratory (1982-3), where they identified a novel cytoplasmic granule (tertiary granule) in human neutrophils, and then to New York University Medical Center. In 1986 he obtained a tenure position at the Spanish National Research Council, establishing successively his laboratory in Madrid, Valladolid, Salamanca, and again Madrid. He has recently moved to the Center for Biological Research Margarita Salas in Madrid (2017). His laboratory has made several important contributions in neutrophil biology, lipid rafts, ether lipids' mechanism of action, and apoptosis as a target in cancer therapy. His laboratory identified the translocation of Fas/CD95 death receptor into lipid raft membrane domains as a new mechanism of apoptosis regulation. This pioneering and seminal work unveiled lipid rafts as a new target in cancer chemotherapy. He is a worldwide leader in the field of antitumor ether lipids or alkylphospholipid analogs. The innovative work of Dr. Mollinedo's multidisciplinary team has identified several unique

mechanisms of action and multiple biomedical applications for these agents. Dr. Mollinedo has authored over 200 articles in peer-reviewed scientific journals.
The following achievements could be highlighted:
- Identification of a novel cytoplasmic granule we coined tertiary granule in human neutrophils (Mollinedo, F. & Schneider, D.L. (1984) *J. Biol. Chem.* **259**, 7143-7150).
- First identification of a selective antitumor drug for the induction of apoptosis in cancer cells (Mollinedo et al. (1997) *Cancer Res.* **57**, 1320-1328).
- First identification of SNARE proteins and their functional role in the regulation of neutrophil exocytosis (Martin-Martin et al. (2000) *Blood* **96**, 2574-2583; Mollinedo et al. (2006) *J. Immunol.* **177**, 2831-2841).
- First identification of the translocation of Fas/CD95 death receptor into lipid rafts as a novel mechanism of apoptosis regulation, leading to the first involvement of lipid rafts as a new target in cancer chemotherapy (Gajate, C. & Mollinedo, F. (2001) *Blood* **98**, 3860-3863; Gajate et al. (2004) *J. Exp. Med.* **200**, 353-365).
- First demonstration of identifying human neutrophils as one of the major cell types expressing arginase I (Munder et al. (2005) *Blood* **105**, 2549-2556).
- First demonstration (both *in vitro* and *in vivo*) of selective induction of apoptosis in several hematological tumors through a novel lipid raft-targeted therapy (Gajate et al. (2007) *Blood* **109**, 711-719; Mollinedo et al. (2010) *Oncogene* **29**, 3748-3757; Mollinedo et al. (2010) *Clin. Cancer Res.* **16**, 2046-2054).
- First identification of endoplasmic reticulum as a novel therapeutic target in pancreatic cancer (Gajate et al. (2012) *Oncogene* **31**, 2627-2639).
- First proposal on the role of mobilization of neutrophil granules in neutrophil plasticity and neutrophil-mediated cancer metastasis (Mollinedo F. (2019) *Trends Immunol.* **40**, 228-242).

Part C. RELEVANT MERITS *(sorted by typology)*

C.1. Publications
A selection of 10 peer-reviewed articles (since 2012) is shown, in which F. Mollinedo is the corresponding author (Impact Factor corresponding to 2020 – Web of Science), as follows:

1. Gajate C, Gayet O, Fraunhoffer NA, Iovanna J, Dusetti N, and **Mollinedo F.**
"Induction of Apoptosis in Human Pancreatic Cancer Stem Cells by the Endoplasmic Reticulum-Targeted Alkylphospholipid Analog Edelfosine and Potentiation by Autophagy Inhibition".
Cancers 2021; **13**(23): 6124.
IF: 6.639 (Q1)

2. García-Navas R, Gajate C, and **Mollinedo F.**
Neutrophils drive endoplasmic reticulum stress-mediated apoptosis in cancer cells through arginase-1 release.
Scientific Reports 2021; **11**(1): 12574.
IF: 4.380 (Q1)

3. Mollinedo F.
"Neutrophil Degranulation, Plasticity, and Cancer Metastasis".
Trends in Immunology 2019; **40**(3): 228-242.
IF: 16.687 (Q1; D1)
Selected by Cell Press Selections (August 2020), "Plasticity of Myeloid Cells in Cancer. Manipulating the Context-Specific Plasticity of Bone Marrow-Derived Cells for Therapeutic Research Strategies".

4. Bello C., Bai J., Zambron B.K., Elías-Rodríguez P., Gajate C., Robina I., Caffa I., Cea M., Montecucco F., Nencioni A., Nahimana A., Aubry D., Breton C., Duchosal M.A., **Mollinedo F.**, and Vogel P.
"Induction of cell killing and autophagy by amphiphilic pyrrolidine derivatives on human pancreatic cancer cells".
European Journal of Medicinal Chemistry 2018; **150**: 457-478.
IF: 6.514 (Q1; D1)

5. Villa-Pulgarín J.A., Gajate C., Botet J., Jimenez A., Justies N., Varela-M R.E., Cuesta- Marbán Á., Müller I., Modolell M., Revuelta J.L., and **Mollinedo F.** "Mitochondria and lipid raft-located F_OF_1-ATP synthase as major therapeutic targets in the antileishmanial and anticancer activities of ether lipid edelfosine".
PLoS Neglected Tropical Diseases 2017; **11**(8): e0005805.
IF: 4.411 (Q1; D1)

6. Yepes, E., Varela-M, R.E., López-Abán, J., Rojas-Caraballo, J., Muro, A., and **Mollinedo, F.**
"Inhibition of granulomatous inflammation and prophylactic treatment of schistosomiasis with a combination of edelfosine and praziquantel".
PloS Neglected Tropical Diseases 2015; **9**(7): e0003893.
IF: 4.411 (Q1; D1)

7. Melo-Lima, S., Lopes, M.C., and **Mollinedo, F.**
"ERK1/2 acts as a switch between necrotic and apoptotic cell death in ether phospholipid edelfosine-treated glioblastoma cells".
Pharmacological Research 2015; **95-96**: 2-11.
IF: 7.658 (Q1; D1)

8. Reis-Sobreiro, M., Roué, G., Moros, A., Gajate, C., de la Iglesia-Vicente, J., Colomer, D., and **Mollinedo, F.**
"Lipid raft-mediated Akt signaling as a therapeutic target in mantle cell lymphoma".
Blood Cancer Journal 2013; **3**: e118.
IF: 11.037 (Q1; D1)

9. Garcia-Navas, R., Munder, M., and **Mollinedo, F.** "Depletion of L-arginine induces autophagy as a cytoprotective response to endoplasmic reticulum stress in human T lymphocytes".
Autophagy 2012; **8**: 1557-1576.
IF: 16.016 (Q1; D1)

10. Gajate, C., Matos-da-Silva, M., Dakir, EL-H., Fonteriz, R.I., Alvarez, J., and **Mollinedo, F.** "Antitumor alkyl-lysophospholipid analogue edelfosine induces apoptosis in pancreatic cancer by targeting endoplasmic reticulum".
Oncogene 2012; **31**: 2627-2639.
IF: 9.867 (Q1; D1)
Featured article in the Oncogene issue of 24 May 2012 (Oncogene, Volume 31, No. 21).

C.2. Research projects
Five selected projects in the last 10 years:

1. "Lipid rafts and inflammatory tumor environment in cancer therapy: alkylphospholipid analogs as raft- and inflammation-targeting agents with manifold therapeutic indications".
Ministerio de Economía, Industria y Competitividad. SAF2017-89672-R
Period: 2018-2020. Budget: 193,600 €. PI: **Faustino Mollinedo**

2. "Lipid rafts, cancer stem cells and inflammatory tumor microenviroment in cancer therapy: alkylphospholipid analogs as raft-targeting leading compounds".
Ministerio de Economía y Competitividad. SAF2014-59716-R.
Period: 2015-2017 (extended one year to 2018). Budget: 338,800 €. PI: **Faustino Mollinedo**.

3. Research Group in the "Red Temática de Investigación Cooperativa en Cáncer" (RTICC).
Ministerio de Economía y Competitividad, Instituto de Salud Carlos III (ISCIII). RD12/0036/0065.
Period: 2013-2016. Budget: 39,013 €/año. PI: **Faustino Mollinedo.**

4. "Antitumor agents targeting subcellular structures, apoptosis regulation and tumor microenvironment: alkyl-lysophospholipid analogs".
Ministerio de Economía y Competitividad. SAF2011-30518.
Period: 2012-2014. Budget: 338,800 €. PI: **Faustino Mollinedo**.

5. "Integrating chemical approaches to treat pancreatic cancer: making new leads for a cure"
European Project: European Community's Seventh Framework Programme [FP7- 2007 2013] under grant agreement n°HEALTH-F2-2011-256986 (PANACREAS).
Period: 2011-2015 (extended to 2016). Total budget: 3,700,000 €. Budget for F. Mollinedo's group (CSIC): 365,250 €.
Coordinator: Georg Feldman (University of Bonn, Germany). PI (CSIC group): F**austino Mollinedo**.

C.3. Contracts, technological or transfer merits (last 10 years)
Contract with FAES Farma. Period: 2005-2012. Budget: 204,400 €.

C.4. Patents

1. Title: “Piperidine derivatives for use in the treatment of pancreatic cancer”
Inventors: Pierre Vogel, Michel Duchosal, Nahimana Aimable, Inmaculada Robina, **Faustino Mollinedo**, Alessio Nencioni. International patent: WO 2018/024907 A1. Publication date: 8 February 2018.

2. Title: “Piperidine derivatives for use in the treatment of pancreatic cancer”
Inventors: Pierre Vogel, Michel Duchosal, Nahimana Aimable, Inmaculada Robina, **Faustino Mollinedo**, Alessio Nencioni. European patent: EP/05.08.16/ EPA 16183131. Publication date: 4 August 2017.

3. Title: “Desarrollo y uso de nanoparticulas lipídicas conteniendo edelfosina y otros éteres de fosfolípidos en la terapia antitumoral y antiparasitaria”.
Inventors: Maria J. Blanco-Prieto, Ander Estella-Hermoso de Mendoza, Miguel Angel Campanero, Janny Alexander Villa Pulgarín, Rubén Eduardo Varela Miranda, **Faustino Mollinedo**.
Patent: ES2388963. Publication date: 3 September 2013.

4. Title: “Uso de edelfosina para la prevención y/o tratamiento de helmintiasis”.
Inventors: Antonio Muro Álvarez, Julio López Abán, Edward Yepes Victoria, **Faustino Mollinedo**.
Patent: ES2378812 B1. Publication date: 6 March 2013.

C.5. Associate Editor: Frontiers in Cell Death (since 2022).
Editorial Board Member: *Genes* (2012-present), *Frontiers in Oncology* (2021-present), *Frontiers in Cell and Developmental Biology* (2021-present), Annals of Translational Medicine (2019-2021), *Anti-Cancer Agents in Medicinal Chemistry* (2016-present), *World Journal of Translational Medicine* (2012-present), *World Journal of Pharmacology* (2012-present), *Anti-Cancer Drugs* (2011-present), *International Journal of Biochemistry and Molecular Biology* (2011-present), *Recent Patents on Anti-Cancer Drug Discovery* (2010-present), *World Journal of Biological Chemistry* (2009-present), *Inmunología*” (2000-2012).

C.6. Reviewer in more than 70 international journals, including: *Nature Reviews Cancer, Nature Nanotechnology, Trends in Immunology, Medicinal Research Reviews, Blood, Leukemia, eLife, Cancer Research, Clinical Cancer Research, Oncogene, Autophagy, FASEB Journal, Journal of Immunology, Journal of Biological Chemistry, Cellular and Molecular Life Sciences, Molecular Cancer Therapeutics, Cell Death & Disease, Molecular Cancer, Cancer Letters, Molecular Pharmacology, British Journal of Pharmacology,* etc.

C.7. Member of international scientific committees and reviewer of international grant proposals:
● Member of the International Expert Scientific Committee to evaluate research projects in the panel of “Expert Committee for Medicine, Health Sciences and Biology (FRIMEDBIO)” for “The Research Council of Norway”, with regular stays in Oslo (Norway) for panel discussions (2017-2019).
● Since 2010: Reviewer for different evaluation agencies of grant proposals from different countries, including: National Science Centre Poland (Poland), The Research Council of Norway (Norway), The Fund for Scientific Research-FNRS” (F.R.S.-FNRS) (Belgium), Agence Nationale de la Recherche (French National Research Agency) (France), Cancéropôle Grand Ouest (France), Israel Science Foundation (Israel), Medical Research Council (UK), Pancreatic Cancer Research Fund (UK), CancerCare Manitoba Foundation (Canada), Italian Ministry for Education University and Research, Agencia Nacional de Promoción de la Investigación, el Desarrollo Tecnológico y la Innovación (ANPIDTYI) and Fondo para la Investigación Científica y Tecnológica (FONCyT) (Argentina).

C.8. *Participating Researcher* in the preparation of “Libro blanco del CSIC” on challenges to be addressed in cancer research (2020).