Part A. PERSONAL INFORMATION

CV date	05/2/2025

First name	ROSA		
Family name	ALIGUE		
Gender (*)	Female	Birth date (dd/mm/yyyy)	
Social Security, Passport, ID number			
e-mail		URL Web	
Open Researcher and Contributor ID (ORCID) (*)			

(*) Mandatory

A.1. Current position

Position	Full professor		
Initial date	26/05/1997		
Institution	University of Barcelona		
Department/Center	Department of Biomedical Sciences		
Country	Spain	Teleph. number	
Key words	Stress response, MAPK pathway, yeast, MAPK-inhibition, cancer therapy, cell cycle, phosphorylation and biothecnology		

A.2. Previous positions (research activity interuptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
08/2014-02/2015 (6 months)	Sabbatical research leave. IMIM, Instituto Investigación Médica Hospital del Mar. Barcelona. Spain
01/1995-12/1996 (24 months)	Reinstatement contract of international researchers. UB. Spain
01/1992-12/1994 (36 months)	Postdoctoral EMBO. Sripps Research Institute, La Jolla. USA
01/1991- 03/1991 (3 months)	PhD student.University of Utrech , Holanda
10/1990-12/1990 (3 months)	PhD student. National Cancer Institute (NIH), Bethesda. USA
07/1989- 09/1989 (3 months)	PhD student. National Institute for Medical Research, London. UK
01/1988- 12/1991 (48 months)	PhD student FPI. University of Barcelona. Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD in Biomedicine	University of Barcelona. Spain	1991
Graduated in Biology	University of Barcelona. Spain	1986

Part B. CV SUMMARY *(max. 5000 characters, including spaces)*

h index = **25** Number of citations: **1786**.
13 Total Supervised Doctoral Thesis. From 2012: **8** Doctoral Thesis and **7** Master Thesis and **10** Graduate Final Thesis
6 *Sexennial* of productive research. The 6th was obtained in 2023.
7 *Quinquennials* of teaching experience at the University. The 6th obtained in 2023.

Rosa Aligue, PI of the current Grant Proposal.

My research career started with my PhD at the University of Barcelona (1987) with the identification of new functions of calmodulin and CaM-dependent kinases in cell cycle control. The work was done in hepatocytes isolated from rat liver and in normal and cancerous cell lines lines (*J. Bio. Chem. 1989, 1990, 1993; Exp. Cell Res.1990; Hepatology 1992* and *Biochem. J. 1990)*. After my PhD (1991) I joined the laboratory of Dr. Paul Russell at The Scripps Research Institute, La Jolla (1992-1995). Where we studied the molecular mechanism that regulates the G2/M transition by the Wee1 kinase in the yeast, *S. pombe*. My contributions were published in *EMBO J. 1994; Mol Bio.Cell. 1996, and J. Bio. Chem, 1996*. In 1996 I moved to the University of Barcelona as a postdoctoral fellow and shortly after, in 1997 I was appointed associate professor at the University of Barcelona. Next, I established my own research group focused on "*the identification of novel roles for CaM-dependent kinases in fission yeast*". During this period, we identified two new CaM-dependent family kinases, Cmk2 and Srk1, involved in cell cycle

control and both **p38 MAPK substrates**, Sty1 in yeast (*FEBS. 2002; JBC 2002*). Identification of the Srk1 kinase revealed a direct and conserved link between cell cycle control and the MAPK stress response (*Mol. Cell 2005; Mol. Biol Cell. 2008*). At that time, my group began studies focusing on MK2 kinase (the mammalian homolog of Srk1) and epirubicin, an anthracycline drug used for chemotherapy. The results showed that MK2 phosphorylates and stabilizes E2F1, which in turn, regulates the expression of FOXM1 involved in cell survival in response to DNA damage (*Mol. Cancer Ther. 2011; Molecular Cancer Research. 2012*). Studies in fission yeast were continued to describe a novel role for the Cmk1 kinase that counteracts the activity of calcineurin in transcriptional activation during the calcium stress response. (*NAR 2014*). Afterwards, we were focused on deciphering the role of a new CaMKK, Ckk2, which was previously identified in my group as the regulatory kinase of Cmk1. The results indicated that Ckk2 is involved in the response to nutritional stress (*Free Radical Biology and Medicine 2018*). We have always been linked to the MAPK signaling pathway, recently we are dedicated on the negative regulation of the MAPKK component, Wis1 in fission yeast (*Sci. Rep. 2022*).

In 2014 I spent six months (September 2014-February 2015) in the laboratory of Dr. Anna Bigas as a sabbatical period to acquire knowledge about stem cells (Leukemia 2016). Next, my research group was collaborating with the group of Dr. Bachs to study the transcriptional function of the p27 inhibitor in mammalian cells (NAR 2017; Oncotarget 2018).

From last years, I collaborate with several groups working on familial colorectal cancer and breast cancer: the group of Dr. Castellvi (IDIBAPS) and Dr. Velasco (IDIBELL), verifying and defining the degree of aggressiveness of the mutations preserved in different types of colorectal cancer (*Hum Mutat. 2019; Genet Med. 2020; Mol Genet Genomics. 2023*). Besides, I also collaborate with the group of Dr. Toni Hurtado focused on breast cancer research and the development of new therapies (manuscript, https://doi.org/10.21203/rs.3.rs-2659889/v1).

In addition to biomedical research, my group **started a line of research in biotechnology**. In 2005 I established a collaboration with Dr. Albericio of the Department of Organic Chemistry, to find new plant cell cycle inhibitors that favor the activation of apoptosis (*J. Med. Res. 2008; Pharmaceutical Biology. 2009; Bioconjugate Chemistry. 2009; J Agric Food Chem. 2011*). Furthermore, since 2011, I have collaborated with the company Fertinagro Biotech to develop biotechnological projects such as the improvement of the synthesis of some enzymes (See patent section; *Animal Feed Science and Technology 2018*) and recently to develop new methods to evaluate plant biostimulants using fission yeast.

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

C.1. Publications. *(From last 10 years.* Corresponding Author)*

- Wang S, Palomeque JA, Santacana G, , ... **Aligué R** (24/27)….Hurtado T. FOXA1 phosphorylation by CDK4 prevents activation of novel chromatin regions and HER2 expression in breast cancer. **2024** https://doi.org/10.21203/rs.3.rs-2659889/v1
- Rocque MJ, Leipart V, Kumar Singh A, Mur P, Olsen MF, Engebretsen LF, Martin-Ramos E, **Aligué R**, Sætrom P, Valle L, Drabløs F, Otterlei M, Sjursen W. Characterization of POLE c.1373A > T p.(Tyr458Phe), causing high cancer risk. **Mol Genet Genomics. 2023** May;298 :555-566. (**IF 3,1. Q2** Genetics & Heredity).
- Marquina M, Lambea E, Carmona M, Sánchez-Marinas M, López-Aviles S, Ayte J, Hidalgo E, **Aligue R*.** A new negative feedback mechanism for MAPK pathway inactivation through Srk1 MAPKAP kinase. **Sci Rep. 2022** 12:19501. doi: 10.1038/s41598-022-23970-8. (**IF: 4,6. Q2** Multidisciplinary Sciences)
- I. Salaet, R. Marques, T. Yance-Chávez, J. Macías-Vidal, D. Gimémez-Zaragoza D and **Aligue R***. Novel Long-Term Phytase from Serratia odorifera: Cloning, Expression, and Characterization**. Food Science and Technology**. **2021**. 1.4. 689-697.(**IF 2,6. Q2.** Applyed Chemistry)
- Mur P, García-Mulero S, Del Valle J, ... **Aligué R** (24/27), ... Valle L. Role of POLE and POLD1 in familial cáncer. **Genet Med. 2020**. 22:2089-2100. **(IF: 8,9. Q1** Genetics & Heredity)
- Prieto-Ruiz F, Vicente-Soler J, Franco A, Gómez-Gil E, Sánchez-Marinas M, Vázquez-Marín B, **Aligué R,** Madrid M, Moreno S, Soto T, Cansado J. RNA-Binding Protein Rnc1 Regulates Cell Length at Division and Acute Stress Response in Fission Yeast through Negative Feedback Modulation of the Stress-Activated Mitogen-Activated Protein Kinase Pathway. **mBio. 2020.** 11:e02815-19. (**IF: 6,78. Q1** Microbiology).
- M. Cambra-López, A. Cerisuelo, P. Ferrer, L. Ródenas, **R. Aligué**, V. Moset, J.J. Pascual. Age influence on effectiveness of a novel 3-phytase in barley-wheat based diets for pigs from 12 to 108 kg under commercial conditions. **Animal Feed Science and Technology. 2020.** 267:114549. (I**F: 2,14. Q1** Agric. & Animal science)
- Castellsagué E*, Li R*, **Aligue R** (3/13),…Foulkes WD. Novel POLE pathogenic germline variant in a family with multiple primary tumors results in distinct mutational signatures. **Hum Mutat**. **2019.**40:36-41. **(IF: 5,35. Q1** Genetics & Heredity)

- Bigas A, Ruiz-Herguido, C, **Aligué R**, Espinosa L. Notch Ligands in Hematopoietic Stem Cell production. In: Miele L and Artavanis-Tsakonas S, editors. Targeting Notch in Cancer: **From the Fruit Fly to the Clinic. Springer, 2018**: 313-332. (ISBN-13: 978-1493988570. ISBN-10: 1493988573)
- M. Hamdi, J. Pérez, M. Létourneau-Montminy, R.Franco-Rosselló, **R. Aligue**, D. Solà-Oriol. The effects ofmicrobial phytases and dietary calcium and phosphorus levels on the productive performance and bone mineralization of broilers. **Animal Feed Science and Technology. 2018.** 243:41-51. (I**F: 2,14. Q1** Agriculture, Dairy and Animal science)
- M. Sanchez-Marinas, D. Gimenez-Zaragoza, E. Martin-Ramos, J. Llanes, J. Cansado, M.J. Pujol, O. Bachs and **R. Aligue*.** Cmk2 kinase is essential for survival in oxidative stress caused by arsenite metalloid by modulating translation through RACK1 orthologue Cpc2. **Free Radical Biology and Medicine**. **2018.** 129: 116-126. **(IF: 6,02. Q1** Biochemistry and Molecular Biology)
- O. Bachs, E. Gallastegui, S. Orlando, A. Bigas, J.M. Morante-Redolat, J. Serratosa, I. Fariñas, **R. Aligué** and M.J. Pujol. Role of p27Kip1 as a transcriptional regulator. **Oncotarget. 2018.** 9: 26259-26278. **(IF: 5,16. Q1** Oncology)
- Gallastegui E, Domuro C, Serratosa J, Larrieux A, Sin L, Martinez J, Besson A, Morante-Redolat JM, Orlando S, **Aligue R**, Fariñas I, Pujol MJ, Bachs O. p27Kip1 regulates alpha-synuclein expression. **Oncotarge**t. **2018.**9: 16368-16379. **(IF: 5,16. Q1** Oncology)
- A. Biçer; A. Islam; S. Orlando, E. Gallastegui, A. Besson, **R. Aligué**, O. Bachs, M.J. Pujol. ChIP-Seq Analysis Identifies p27(Kip1)-Target Genes Involved in Cell Adhesion and Cell Signalling in Mouse Embryonic Fibroblasts. **PLoS On**e. **2017.** e0187891. (**IF: 3,54. Q1** Multidisciplinary Sciences)
- Esteban-Jurado C, Giménez-Zaragoza D, Muñoz J, …**Aligué R (20/21)**, Castellví-Bel S. POLE and POLD1 screening in 155 patients with multiple polyps and early-onset colorectal cáncer. **Oncotarget. 2017.** 8: 26732-26743. (**IF: 5,16. Q1.** Oncology)
- Perearnau A, Orlando S, Islam AB, Gallastegui E, Martínez J, Jordan A, Bigas A, **Aligué R**, Pujol MJ, Bachs O. p27Kip1, PCAF and PAX5 cooperate in the transcriptional regulation of specific target genes. **Nucleic Acids Res. 2017.** 45:5086-5099. (I**F:10,16. Q1. D1** Biochemistry and Molecular Biology)
- Gekas C, D'Altri T, **Aligué R**, González J, Espinosa L, Bigas A. β-Catenin is required for T-cell leukemia initiation and MYC transcription downstream of Notch1. **Leukemia. 2016.**10:2002-2010. (I**F:11,70. Q1. D1)**
- Gómez-Hierro A, Lambea E, Giménez-Zaragoza D, López-Avilés S, Yance-Chávez T, Montserrat M, Pujol MJ, Bachs O, **Aligue R***. Ssp1 CaMKK: A Sensor of Actin Polarization That Controls Mitotic Commitment through Srk1 in Schizosaccharomyces pombe. **PLoS One. 2015..**10:e0143037. (I**F:3,23. Q1** Multidisciplinary)
- S. Orlando, E. Gallastegui, A. Besson, G. Abril, **R. Aligué**, M.J. Pujol and O. Bachs. P27Kip1 and p21Cip1 collaborate in teh regulation of trasncription by recuiting cyclin–cdk complexes on the promoters of target genes. **Nucleic Acids Res**. **2015**. 43: 6860-73. (**IF:9,11. Q1. D1** Biochemistry and Molecular Biology**)**
- E. Cisneros-Barroso, T. Yance-Chávez, A. Kito, R. Sugiura, A. Gómez-Hierro, D. Gimenez-Zaragoza and **R. Aligue***. Negative feedback regulation of calcineurin-dependent Prz1 transcription factor by the CaMKK-CaMK1 axis in fission yeast. **Nucleic Acids Res. 2014.**42: 9573-9587. (**IF:8,8. Q1. D1** Biochemistry**)**
- N. de Olano, C. Koo, L.J. Monteiro, P. H. Pinto, A. R. Gomes, **R. Aligue***, E. W.-F. Lam, *****. The p38 MAPK-MK2 axis regulates E2F1 and FOXM1 expression in epirubicin treatment and resistance. **Molecular Cancer Research**, **2012.** 10:1189-1202**. (IF: 4,35. Q1** Oncology**)**

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster)

The PI Rosa Aligué has participated in 66 congresses from 1988 to 2023, 50 International and 16 National Congresses. The type of participation has been mostly poster, 24 have been oral presentations and among these, 5 as invited speaker.

C.3. Research projects, indicating your personal contribution. In the case of young researchers, indicate lines of research for which they have been responsible.

Projects as IP:

- Desarrollo de un nuevo método para la clasificación y valoración de bioestimulantes. Ministerio de Ciencia e Innovación. **RTC2019-006922-2. 2020-2024.** IP: Aligué. Budget: 219.581€

- Funcion de la familia de quinasas dependientes de CaM en la captacion de glucosa y la homeostasis de nutrientes: conexion con la via de señalizacion mTOR. MEC, Ministerio de Economia y Competitividad **BFU2015-65311-R. 2016-2018.** IP: Aligué. Budget: 145.200 €
- La familia de quinasas dependientes de calmodulina en la señalización de respuesta a estrés y el control del ciclo celular. MEC, Ministerio de Economía y Competitividad. **BFU2012-31220/BMC. 2013-2015.** IP: Aligué. Budget: 126.360€
- La MAP quinasa p38 y la MAPKAP en la señalización de respuesta a estrés y el control del ciclo celular. MCI, Ministerio de Ciencia e Innovación. **BFU2009-10778/BMC. 2009-2012.** IP: Aligué. Budget:150.000€.
- Mecanismos de regulación en la señalización de las MAPK activadas por estrés y la división celular: Estudio de la MAPKAP cinasa Srk1, nuevo componente del *checkpoint* de entrada a mitosis en *Schizosaccharomyces pombe.* MEC, Ministerio de Educación y Ciencia. **BFU2006-00375/BMC**. **2007-2009**. IP: Aligué. Budget: 141.540€.
- Mecanismos de regulación en la señalización de las MAP cinasas activadas por estrés y la división celular: Caracterización funcional de la nueva cinasa Cmk3 en levadura, *Schizosaccharomyces pombe*. MCYT, Ministerio de Ciencia y Tecnología. **BMC2003-00408**. **2003-2006.** IP: Aligué. Budget: 113.350€.
- Mechanisms and regulation of chromosome separation during mitosis in yeast**.** European Comisión **ERBFMRX-CT98-0212**. **1998- 2002**. IP: Aligué. Budget: 170.000€

Projects as sub-project director:

- Oxidative stress and cell cycle group**.** Grup de Recerca de la Generalitat de Catalunya: **2021 SGR 00007**. IP: Elena Hidalgo. Sub-group director: Rosa Aligué. Budget: 60.000 €

Projects as a participant researcher:

Resistance under combinatorial treatment in ER+ and ER- breast cancer. EUUN-European Union. **847912–RESCUER**. 2020-2024. IP. Dr Toni Hurtado. Budget: 466.337,50€

C.4. Contracts, technological or transfer merits, Include patents and other industrial or intellectual property activities (contracts, licenses, agreements, etc.) in which you have collaborated. Indicate: a) the order of signature of authors; b) reference; c) title; d) priority countries; e) date; f) Entity and companies that exploit the patent or similar information, if any.

Contracts:

- Nuevas estrategias para la producción de la enzima Fitasa. Convenio de Colaboración con la empresa Fertinagro Biotech Fertinagro. S.L. **2021.** IP: Rosa Aligué. Budget: 20.125€
- Identificación de moléculas activas a partir de levaduras y evaluación de su eficacia como estimulante del crecimiento en condiciones de estrés a través del modelo celular *Schizosacharomyces pombe.* Convenio de Colaboración con la empresa Fertinagro Biotech. S.L. **2017-2019**. IP: Rosa Aligué. Budget: 60.375€
- Identificación, aislamiento y selección de microorganismos capaces de estimular el crecimiento vegetal, así como inhibir el desarrollo de microorganmismos no desables. Convenio de colaboración con la empresa Fertinagro. S.L. **2012-2015**. IP: Rosa Aligué. Budget: 60.375€
- Producción, caracterización y optimización de la enzima fitasa. Convenio de colaboración con la empresa Fertinagro. S.L. **2013.** IP: Rosa Aligué. Budget: 20.125€

Patents:

- Patent of invention. PCT/ES2018/070475. Inventors: S. Atares, J. Romero, I. Salaet, M. Ferrer, MA. Naranjo, T. Yance, **R. Aligué**. Aditivo alimentario para piensos y utilización del mismo. Holding Institution: Fertinagro S.L. and University of Barcelona. 03/07/2018. Country of priority: Spain. Expanded Internationally. Publication reference: WO/2020/008081.
- Patent of invention. PCT PCT/ES2017/070481. Inventors: S. Atares, J. Romero, I. Salaet, M. Ferrer, MA. Naranjo, T. Yance, **R. Aligué**. Procedimiento de obtención de un fertilizante líquido a partir de biomasa vegetal. Holding Institution: Fertinagro S.L. and University of Barcelona. 03/07/2017. Country of priority: Spain. Expanded Internationally. Publication reference: WO/2019/008193
- Patent of invention. PCT PCT/ES2017/070463. Inventors: S. Atares, J. Romero, I. Salaet, M. Ferrer, MA. Naranjo, T. Yance, **R. Aligué**. Procedimiento para la obtención de un producto de levadura de alta concentración en nucleótidos. Holding Institution: Fertinagro S.L. and University of Barcelona. 27/06/2017. Country of priority: Spain. Expanded Internationally. Publication reference: WO/2019/002634
- Patent of invention. PCT/ES2011/070587. Inventors: **R. Aligué**, S. Atares, R. Marquès, J. Martin, J. Romero and I. Salaet. Novel phytase, method for obtaining and use thereof. Holding Institution: Fertinagro S.L. and University of Barcelona. 08/08/2011. Country of priority: Spain. Extended to Europe.