CV Date	26/01/2022

Part A. PERSONAL INFORMATION

First Name	Rodrigo		
Family Name	Barderas Manchado		
Sex	Male	Date of Birth	08/07/1976
ID number Social Security, Passport	53107378X		
URL Web			
Email Address	r.barderasm@isciii.es		
Open Researcher and Contributor ID (ORCID)	0000-0003-3539-7469		

A.1. Current position

Job Title	Científico Titular de OPIs		
Starting date	2017		
Institution	Instituto de Salud Carlos III		
Department / Centre	Unidad de Proteómica Funcional / UFIEC		
Country	Spain	Phone Number	
Keywords	Mass spectrometry; Monoclonal antibodies; Proteomics; Cancer		

A.2. Previous positions (Research Career breaks included)

Period	Job Title / Name of Employer / Country
2020 - 2021	Profesor Asociado 3+3 / Universidad Rey Juan Carlos

A.3. Education

Degree/Master/PhD	University / Country	Year
Bioquímica y biología molecular	Facultad de Ciencias Químicas / Spain	2004
Licenciado en Ciencias Químicas Especialidad Bioquímica	Universidad Complutense de Madrid / Spain	1999

Part B. CV SUMMARY

Dr. Barderas obtained his PhD in September 2004 in Chemistry in the specialty of Biochemistry and Molecular Biology with the highest qualification in the Complutense University of Madrid, being the thesis awarded with the Extraordinary Doctorate Award for the best Thesis in the area. Subsequently, Rodrigo moved as a postdoctoral researcher to the Protein Technology Unit of the Spanish National Cancer Research Center (CNIO). Rodrigo spent four years in total at the CNIO (until December 31, 2008) with a one-year stay at the Harvard Institute of Proteomics thanks to a postdoctoral contract "Sara Borrel" of the FIS. Subsequently, Rodrigo joined the Functional Proteomics Laboratory of the Center for Biological Research (CIB-CSIC) from 1/1/2009 to the end of 2011, first with the Sara Borrel contract and then with the highly competitive JAE-DOC contract of the CSIC. In the 2010 call, Dr. Barderas obtained the Ramón y Cajal contract, with which he moved to the Department of Biochemistry and Molecular Biology I of the UCM on December 1, 2011 to the laboratory of Mayte Villalba. As a Ramón y Cajal researcher, Rodrigo used his experience in Proteomics to the analysis of Allergy. In July 2016, Dr. Barderas obtained a position as a Senior Scientist (Científico Titular de Organismos Públicos de Investigación) and since his sign on March 27, 2017, Rodrigo is finally PI and Head of the Functional Proteomics Unit at the Carlos III Health Institute (ISCIII). Rodrigo is currently establishing a new line of research in the ISCIII through the use of cutting-edge proteomic techniques for the study of colorectal cancer and negatively related chronic diseases.

In summary, Dr. Barderas has published >120 articles since 2002, with articles (Impact Factor>5) in the most important Proteomics journals (4 Molecular & Cellular

Proteomics, 3 Journal Proteome Research, ...), cancer (Cancer Research, Clinical Cancer Research, 4 Oncogene, ...), allergy and Immunology (4 JACI, Allergy ...), or Multidisciplinary Sciences (PNAS, Scientific Reports, Anal Chem, ...). Rodrigo has also co-authored two patents currently in exploitation by the biotech company ProAlt, SL, has obtained 19 awards for research work or related to his scientific career or as group leader, and has co-directed 7 Doctoral Theses since 2010.

Since the establishment of the Unit 27/3/2017), Rodrigo has published about 75 articles, 3 more are in press or recently sent to publish, for an h-index since 2017 of 29 and an i10-index of 77 with 2396 citations - google scholar-), and a total h-index of 37, a total of 3821 citations and an i10-index of 86.

Part C. RELEVANT ACCOMPLISHMENTS

C.1. Most important publications in national or international peer-reviewed journals, books and conferences

AC: corresponding author. (nº x / nº y): position / total authors. If applicable, indicate the number of citations

1 **Scientific paper**. María Garranzo-Asensio; Ana Guzmán-Aránguez; Eloy Povedano; et al; Rodrigo Barderas (AC). (20/20). 2020. Multiplexed monitoring of a novel autoantibody diagnostic signature of colorectal cancer using HaloTag technology-based electrochemical immunosensing platform Theranostics. Ivyspring. 10-7, pp.3022-3034. ISSN 1838-7640. https://doi.org/10.7150/thno.42507

2 **Scientific paper**. Maria Garranzo-Asensio; Ana Guzman-Aranguez; Carmen Poves; et al; (AC). (12/12). 2019. The specific seroreactivity to ΔNp73 isoforms shows higher diagnostic ability in colorectal cancer patients than the canonical p73 protein.Scientific Reports. Nature. 9-1, pp.13547. ISSN 2045-2322.

3 **Scientific paper**. Pablo San Segundo-Acosta; Ana Montero-Calle; Manuel Fuentes; Alberto Rábano; Mayte Villalba; (AC). (6/6). 2019. Identification of Alzheimer's Disease Autoantibodies and Their Target Biomarkers by Phage Microarrays Journal of Proteome Research. ACS. 18-7, pp.2940-2953. ISSN 1535-3907.

4 **Scientific paper**. Valverde, Alejandro; Povedano, Eloy; Montiel, Victor Ruiz-Valdepenas; Yanez-Sedeno, Paloma; Garranzo-Asensio, Maria; Barderas, Rodrigo; Campuzano, Susana; Pingarron, Jose M. (AC). (8/8). 2018. Electrochemical immunosensor for IL-13 Receptor alpha 2 determination and discrimination of metastatic colon cancer cells BIOSENSORS & BIOELECTRONICS. 117. ISSN 0956-5663.

5 **Scientific paper**. Povedano, Eloy; Valverde, Alejandro; Ruiz-Valdepenas Montiel, Victor; et al; Barderas, Rodrigo; Pingarron, Jose M.(6/12). 2018. Rapid Electrochemical Assessment of Tumor Suppressor Gene Methylations in Raw Human Serum and Tumor Cells and Tissues Using Immunomagnetic Beads and Selective DNA Hybridization ANGEWANDTE CHEMIE-INTERNATIONAL EDITION. Wiley. 57-27, pp.8194-8198. ISSN 1433-7851.

6 **Scientific paper**. Mendes M; Peláez-García A; López-Lucendo M; Bartolomé RA; Calviño E; Barderas R; Casal JI (AC). (7/7). 2017. Mapping the Spatial Proteome of Metastatic Cells in Colorectal Cancer Proteomics. ISSN 1615-9861.

7 **Scientific paper**. Maria Garranzo-Asensio; Ana Guzman-Aranguez; Carmen Poves; et al; Rodrigo Barderas (AC). (13/13). 2016. Toward Liquid Biopsy: Determination of the Humoral Immune Response in Cancer Patients Using HaloTag Fusion Protein-Modified Electrochemical Bioplatforms.ANALYTICAL CHEMISTRY. ACS Publications. 88-24, pp.12339-12345. ISSN 0003-2700.

8 **Scientific paper**. Roi Villar-Vázquez; Guillermo Padilla; María Jesús Fernández-Aceñero; et al; Rodrigo Barderas (AC); J. Ignacio Casal. (8/9). 2016. Development of a novel multiplex beads-based assay for autoantibody detection for colorectal cancer diagnosis Proteomics. WILEY-BLACKWELL. 16-8, pp.1280-1290. ISSN 1615-9853.

9 **Scientific paper**. Rodrigo Barderas; Marta Mendes; Sofia Torres; et al; J. Ignacio Casal. (1/10). 2013. In-depth Characterization of the Secretome of Colorectal Cancer Metastatic Cells Identifies Key Proteins in Cell Adhesion, Migration, and Invasion MOLECULAR & CELLULAR PROTEOMICS. AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC. 12-6, pp.1602-1620. ISSN 1535-9484.

10 **Scientific paper**. Alberto Pelaez-Garcia (AC); Rodrigo Barderas; Sofia Torres; Pablo Hernandez-Varas; Joaquin Teixido; Felix Bonilla; Antonio Garcia de Herreros; J. Ignacio Casal. (1/8). 2013. FGFR4 Role in Epithelial-Mesenchymal Transition and Its Therapeutic Value in Colorectal Cancer PLOS ONE. PUBLIC LIBRARY SCIENCE. 8-5. ISSN 1932-6203.

11 **Scientific paper**. Rodrigo Barderas; Ruben A. Bartolome; Maria Jesus Fernandez-Acenero; Sofia Torres; J. Ignacio Casal. (1/5). 2012. High Expression of IL-13 Receptor alpha 2 in Colorectal Cancer Is Associated with Invasion, Liver Metastasis, and Poor Prognosis CANCER RESEARCH. AMER ASSOC CANCER RESEARCH. 72-11, pp.2780-2790. ISSN 0008-5472.

12 **Scientific book or monograph**. Rodrigo Barderas (AC); Joshua LaBaer; Sanjeeva Srivastava. (1/3). 2021. Editor of the Book Protein Microarrays for Disease Analysis Joshua LaBaer, Sanjeeva Srivastava & Rodrigo Barderas. Editors of the Book Protein Microarrays for Disease Analysis. Methods in Molecular Biology. Humana Press. Springer Nature. 2344, pp.1-282. ISSN 1064-3745, ISBN 978-1-61779-043-0.

13 **Scientific paper**. Guillermo Solís-Fernández; Ana Montero-Calle; Javier Martínez-Useros; et al; (AC). (14/14). 2022. Spatial Proteomic Analysis of Isogenic Metastatic Colorectal Cancer Cells Reveals Key Dysregulated Proteins Associated with Lymph Node, Liver, and Lung Metastasis Cells-Basel. MDPI. pp.1-14. ISSN 2073-4409. https://doi.org/10.3390/xxxxx

14 **Scientific paper**. María Garranzo-Asensio; Guillermo Solís-Fernández; Ana Montero-Calle; et al; (AC). (10/10). 2022. Seroreactivity Against Tyrosine Phosphatase PTPRN Links Type 2 Diabetes and Colorectal Cancer and Identifies a Potential Diagnostic and Therapeutic Target Diabetes. 71, pp.1-14. ISSN 0012-1797. https://doi.org/10.2337/db20-1206

15 **Scientific paper**. Pablo San Segundo-Acosta; Ana Montero-Calle; August Jernbomm-Falk; et al; (AC). (16/16). 2021. Multiomics Profiling of Alzheimer's Disease Serum for the Identification of Autoantibody Biomarkers.Journal of Proteome Research. ISSN 1535-3893. https://doi.org/10.1021/acs.jproteome.1c00630

16 **Scientific paper**. Eloy Povedano; Maria Gamella; Rebeca M Torrente-Rodriguez; et al; Rodrigo Barderas (AC); José Manuel Pingarrón. (8/10). 2021. Magnetic microbeads-based amperometric immunoplatform for the rapid and sensitive detection of N6-methyladenosine to assist in metastatic cancer cells discrimination Biosensors and Bioelectronics. Elsevier. 171, pp.112708. ISSN 0956-5663.

17 **Scientific paper**. Benjamin A. Katchman; Rodrigo Barderas; Rizwan Alam; et al; Karen S. Anderson.(2/11). 2016. Proteomic Mapping of p53 Immunogenicity in Pancreatic, Ovarian, and Breast Cancers Proteomics Clinical Applications. Wiley Online Library. 10-7, pp.720-731. ISSN 1862-8354.

18 **Scientific paper**. Alberto Pelaez-Garcia; Rodrigo Barderas; Raquel Batlle; et al; J. Ignacio Casal, J.(2/12). 2015. A Proteomic Analysis Reveals That Snail Regulates the Expression of the Nuclear Orphan Receptor Nuclear Receptor Subfamily 2 Group F Member 6 (Nr2f6) and Interleukin 17 (IL-17) to Inhibit Adipocyte Differentiation MOLECULAR & CELLULAR PROTEOMICS. AMER SOC BIOCHEMISTRY MOLECULAR BIOLOGY INC. 14-2, pp.303-315. ISSN 1535-9476.

19 **Scientific paper**. Ruben A. Bartolome; Rodrigo Barderas; Sofia Torres; Maria Jesus Fernandez-Acenero; Marta Mendes; Jesus Garcia-Foncillas; Maria Lopez-Lucendo; J. Ignacio Casal. (2/8). 2014. Cadherin-17 interacts with alpha 2 beta 1 integrin to regulate cell proliferation and adhesion in colorectal cancer cells causing liver metastasis ONCOGENE. NATURE PUBLISHING GROUP. 33-13, pp.1658-1669. ISSN 0950-9232.

20 **Scientific paper**. Sofia Torres; Ruben A. Bartolome; Marta Mendes; et al; J. Ignacio Casal. (3/12). 2013. Proteome Profiling of Cancer-Associated Fibroblasts Identifies Novel Proinflammatory Signatures and Prognostic Markers for Colorectal Cancer CLINICAL CANCER RESEARCH. AMER ASSOC CANCER RESEARCH. 19-21, pp.6006-6019. ISSN 1078-0432.

21 **Scientific paper**. Rodrigo Barderas; Roi Villar-Vazquez; Maria Jesus Fernandez-Acenero; Ingrid Babel; Alberto Pelaez-Garcia; Sofia Torres; J. Ignacio Casal. (1/7). 2013. Sporadic colon cancer murine models demonstrate the value of autoantibody detection for preclinical cancer diagnosis SCIENTIFIC REPORTS. NATURE PUBLISHING GROUP. 3. ISSN 2045-2322.

22 **Review**. Nuria Rodriguez Salas; Gema Dominguez; Rodrigo Barderas; Marta Mendiola; Xabier Garcia-Albeniz; Joan Maurel; Jaime Feliu. (3/7). 2017. Clinical relevance of colorectal cancer molecular subtypes Critical Reviews in Oncology/Hematology. Elsevier. 109, pp.9-19. ISSN 1040-8428.

C.3. Research projects and contracts

1 **Project**. PI20CIII/00019, Identificación y validación de biomarcadores del cáncer colorrectal involucrados en la diseminación tumoral. Rodrigo Barderas Manchado. (Instituto de Salud Carlos III). 01/01/2021-31/12/2023. 112.000 €. Principal investigator.

2 **Project**. PID2019-103899RB-I00, Biosensors for unraveling the legacy and future of cancer epigenetics and metastasis (EPIMETASENS). Susana Campuzano Ruiz. (Universidad Complutense de Madrid). 01/01/2020-31/12/2022. 205.700 €. Team member. Rodrigo Barderas y 2 miembros de su grupo -Ana Montero Calle y Guillermo Solís- forman parte del equipo de trabajo del proyecto

3 **Project**. RD16/0006/0014, ASMA, REACCIONES ADVERSAS Y ALÉRGICAS (ARADYAL). ARADYAL. Maria Jose Torres. (MINISTERIO DE SANIDAD Y CONSUMO). 01/01/2017-31/12/2022. 237.000 €. Team member.

4 **Project**. Combined proteomics and single-molecule fluorescence based profiling of metastatic colorectal cancer markers. The Research Foundation-Flanders (FWO). Johan Hofskens. (ISCIII y Universidad Católica de Lovaina). 01/10/2017-30/09/2021. 112.000 €. Principal investigator. Co-promotor de la propuesta junto a Johan Hofskens. Cuatro años contrato predoctoral -Guillermo Solís- (2 años en Lovaína y 2 años en ISCIII) Bench fee 16000€

5 **Project**. PI17CIII00045, Analisis inmunómico y proteómico cuantitativo del cáncer colorrectal y enfermedades crónicas negativamente relacionadas para su diagnóstico temprano. (PI17CIII/00045). Rodrigo Barderas Manchado. (Instituto de Salud Carlos III). 01/01/2018-31/12/2020. 89.000 €. Principal investigator.

6 **Project**. CTQ2015-64402-C2-1-R, Nuevas plataformas de multiplexado electroanalíticas para la detección y pronóstico de enfermedades neoplásicas mediante biopsias líquidas. Jose Manuel Pingarrón Carrazón. (Universidad Complutense de Madrid). 01/01/2016-31/12/2019. 206.000 €. Team member. Rodrigo Barderas forma parte del equipo de trabajo del proyecto

7 **Project**. RD07/0064/0009, Network of the study of adverse reactions to allergens and drugs (RIRAAF). RIRAAF. MIGUEL BLANCA. (MINISTERIO DE SANIDAD Y CONSUMO). 01/01/2015-31/12/2016.

8 **Contract**. Proteored Fundación Genoma España. JUAN PABLO ALBAR. (Centro Nacional de Investigaciones Oncológicas/Centro de de Investigaciones Biológicas). 01/01/2005-01/01/2010.

C.4. Activities of technology / knowledge transfer and results exploitation

1 Rodrigo Barderas; Ingrid Babel; Ignacio Casal Álvarez. P201030708. METODO DE DIAGNOSTICO/PRONOSTICO DEL CANCER COLORRECTAL BASADO EN LA DETECCION EN SUERO DE ANTICUERPOS FRENTE A AUTOANTIGENOS TUMORALES Spain. 13/05/2010. CSIC 100%. PROTEIN ALTERNATIVES SL.

2 Rodrigo Barderas; Ingrid Babel; Ignacio Casal Álvarez. P200930203. Método de obtención de datos útiles para el diagnóstico o el pronóstico del cáncer colorrectal Spain. 29/05/2009. CNIO 80% -CSIC 20%. PROTEIN ALTERNATIVES SL.