ALL. B

Decreto Rettore Università di Roma "La Sapienza" n. 1851/2023 del 12/07/2023
Procedura valutativa per la copertura di n.1 posto di Professore di ruolo di I fascia presso il Dipartimento di Medicina Molecolare - Facoltà di Farmacia e Medicina, Settore Concorsuale 06/A2 - Settore Scientifico-Disciplinare MED/04.
Codice Concorso: 2023POR011

Diana Bellavia

Curriculum Vitae

Scientifico Professionale

Roma, 26-07-2023

Part I – General Information

Full Name	Diana Bellavia
Citizenship	Italian
Spoken Languages	Italian and English

Part II – Education

Type	Year	Institution	Notes (Degree, Experience,…)
University graduation	1993	Department of Experimental Medicine – "Sapienza" University of Rome	Master's Degree cum laude in Biological Sciences. Thesis title: "Modelli sperimentali per lo studio del differenziamento timocitario in vitro".
Licensure	1995	Tor Vergata University, Rome	"Abilitazione all'esercizio della professione di biologo".
Ph.D.	1998	University of L'Aquila	Ph.D. Degree in Experimental Medicine. Thesis title: "Fattori trascrizionali coinvolti nel 'signalling' dell'IL-6: applicazione allo studio della patogenesi dei disordini emolinfoproliferativi". IX cycle.
Post-doctoral Fellow	1998	Department of Experimental Medicine – "Sapienza" University of Rome	Postdoctoral Fellowship by "Fondazione Italiana per la Ricerca sul Cancro" (FIRC)
Researcher	1999	Department of Experimental Medicine – "Sapienza" University of Rome	Assistant Professor – SC 06/A2 SSD MED/04 – General Pathology
Associate Professor	2012-present	Dept. of Molecular Medicine, University "La Sapienza" of Rome	Associate Professor - SC 06/A2 SSD MED/04 – General Pathology
ASN	2020-	Ministero dell'Istruzione,	"Abilitazione Scientifica

	present	dell'Università e della Ricerca (MIUR)-ANVUR	Nazionale alle funzioni di Professore di I Fascia (ASN 2018/2020), SC 06/A2-Patologia Generale e Patologia Clinica-MED/04".
ASN	2022-present	Ministero dell'Istruzione, dell'Università e della Ricerca (MIUR)-ANVUR	"Abilitazione Scientifica Nazionale alle funzioni di Professore di I Fascia (ASN 2021/2023) SC 06/N1-Scienze delle Professioni Sanitarie e delle Tecnologie Mediche Applicate --MED46".

Part III – Appointments

IIIA – Academic Appointments

Start	End	Institution	Position
2022/10/27	present	"Sapienza" University of Rome	"Coordinatrice della "Commissione Ricerca e Terza Missione" del Dipartimento di Medicina Molecolare-Sapienza Università di Roma, nominata dal Direttore". (Proc. N. 0004440 del 21/11/2022)
2022/10/27	present	"Sapienza" University of Rome	"Delegata della Direttrice del Dipartimento di Medina Molecolare nella Commissione Ricerca della Facoltà di Farmacia e Medicina".
2020	present	"Sapienza" University of Rome	Member of the Academic Board of the PhD program in "Molecular Medicine". 36°-39° cycle.
2013	2017	"Sapienza" University of Rome	Member of the Academic Board of the PhD program in "Molecular Medicine". XXIX-XXXIII cycle.
2008	2010	University of Campania, "Luigi Vanvitelli", II University of Naples.	Member of the Faculty of the PhD program in "Diagnostica di Laboratorio e metodologie di analisi in e-sanità". XXIV-XXVI cycle.
2003	2007	University of Campania "Luigi Vanvitelli", II University of Studies Naples.	Member of the Academic Board of the PhD program in "Diagnostica di Laboratorio: sviluppo di tecniche cellulari e molecolari e di Bioingegneria e di Informatica". XIX-XXIII cycle.

IIIB – Reviewer Activity

Start	End	Institution	Position
2018	Present	Ministero dell'Istruzione, dell'Università e della Ricerca (MIUR).	Reviewer for Scientific evaluation of research projects presented in the framework of the PRIN Calls
2011	2014	Ministero dell'Istruzione, dell'Università e della Ricerca (MIUR).	MIUR Reviewer for "Valutazione quinquennale della Ricerca" (VQR)-SSD MED/04.
2007	present	Referee of the following journals: Nature Communication, Oncogene, Cancer Research; Cell Death&Disease, Experimental & Clinica Cancer research…	Referee

IIIC – Other Appointments

Start	End	Institution	Position
2018	Present	Ministero dell'Istruzione, dell'Università e della Ricerca (MIUR).	Admission to MIUR-Reprise (Register of Scientific Experts established)
2012	present	Laboratory of Molecular Pathology-Department of Molecular Medicine "Sapienza" University of Rome.	Team leader. Group composition: Research fellows (1), postdoctoral fellow (1) (founded by Umberto Veronesi), Ph.D. student (1); interns for master's thesis (2).
2007	present	Laboratory of Molecular Pathology-Department of Experimental Medicine. Department of Molecular Medicine. "Sapienza" University of Rome.	Tutor activity for students (12), PhD students (9), post-doc (3) at Laboratory of Molecular Pathology-Sapienza University
1999/06/01	1999/09/1	Guy's, Kings' and St Thomas Medical School, London.	"Visiting Scientist" at Prof. Adrian Hayday's lab. Peter Gorer Department of Immunobiology.
1997/06/01	1997/09/30	"Thomas Jefferson University", Philadelphia-USA.	"Visiting Scientist" at Prof. Carlo Maria Croce's lab, Kimmel Cancer Center, Department of Immunology and Microbiology

Part IV – Teaching experience

Year	Institution	Lecture/Course
2021/10/01 to present	San Camillo Forlanini Hospital-"Sapienza" University of Rome.	Professor of General Pathology in "Basi Fisiopatologiche Delle Malattie" integrated course. Bachelor's degree program in Nursing.

2017/10/01 to present	San Camillo Forlanini Hospital- “Sapienza” University of Rome.	Professor of Techniques of Laboratory Medicine in the Bachelor’s degree program in Biomedical Laboratory Techniques.
2017/10/01 to 2021/01/30	Sapienza University – University of Cassino.	Professor of General Pathology and Coordinator of “Basi Fisiopatologiche Delle Malattie” integrated course. Bachelor’s degree program in Nursing.
2012/10/01 to present	San Camillo Forlanini Hospital- “Sapienza” University of Rome.	Professor of General Pathology and Coordinator of “Basi Cellulari e Molecolari della Vita” integrated course [1035043]. Bachelor’s degree in Biomedical Laboratory Techniques.
2011/10/01 to present	San Camillo Forlanini Hospital- “Sapienza” University of Rome.	Professor of General Pathology and Coordinator of “Basi Cellulari e Molecolari della Vita” integrated course [1035043]. Bachelor’s degree in Nutritional Science.
2001/10/01 to present	Policlinico Umberto I Hospital- “Sapienza” University of Rome.	Professor of General Pathology and Coordinator of “Basi fisiopatologiche delle malattie” integrated course [1034951]. Coordinator II semester, I year (since 2020). Bachelor’s degree in Obstetrics.
2001/10/01 to present	Policlinico Umberto I Hospital- “Sapienza” University of Rome.	Professor of General Pathology and Pathophysiology in the integrated course of Pathology and General Pathophysiology [1025586]. Bachelor’s Degree in Medicine and Surgery- Course ‘D’.

Part V - Society memberships, Awards and Honors

Year	Title
2023 (22-23/02)	Member of the organizing committee of the Conference entitled “Highlighting the Research Activity of the Sapienza Faculty of Pharmacy and Medicine” at the disposal of the Dean of Faculty, as Delegate of the Molecular Medicine Department in the “Research Committee” of the Faculty of Pharmacy and Medicine.
2023-present	Member of SIRTEPS (Società Italiana di Ricerca Traslazionale e delle Professioni Sanitarie).
2022-present	Member of the European Association for Cancer Research (EACR)
2022-present	Member of “Società Italiana di Cancerologia” (SIC)
2021-present	Affiliation with “Centre for Preclinical Research and Animal Welfare”
2020-2021	Affiliation with “Fondazione IIT” (Istituto Italiano di Tecnologia)
2019-present	Member of the Italian Society of Pathology and Translational Medicine (SIPMET), https://lastatalenews.unimi.it/eventi/youngscientist-meeting-sipmet
2019	Press Releases on regional sites and newspapers (UNIVERSITÀ SAPIENZA DI ROMA; LSWN.IT, ‘S METEOWEB.EU; QUOTIDIANOSANITA.IT), for the research manuscript: “Kras/ADAM17-dependent Jag1-ICD reverse signaling sustains colorectal cancer progression and chemoresistance” (Pelullo M. et al. Cancer Research, 1 19 Nov 1; 79 (21): 5575
2005	Member of the organizing committee “EMBO Workshop on Notch Signaling in Development and Cancer". Rome, Italy – Hotel Residenza in Farnese.
1998	Winner of three-year Postdoctoral Fellowship by “Fondazione Italiana per la Ricerca sul Cancro” (FIRC)

Part VI - Funding Information [grants as PI-principal investigator or I-investigator]

Year	Title	Program	Grant value
2023-present	Research title: “Dissecting the dynamic interplay between breast cancer stem cells and tumor microenvironment”. (Role: **PI**).	Italian Ministry of Education, University and Research (MIUR) – Bando PRIN 2022. Prot. 20223NY37M	Financing: total 236.901 euro 118,450 euro/unit
2022-present	HEAL ITALIA (PE06-HEAL-ITALIA-SPOKE-4-DMM). Partenariato Esteso 6 Spoke 4: 4D Precision Diagnostics Precision medicine integrating clinical and imaging biomarkers for a "precise in space and time" diagnosis. D.R. 3536/22 Prot. n. PE6421852A775718 (Role: **“massa critica”**)	Funding from the European Union – Next GenerationEU through the Italian Ministry of University and Research under PNRR - M4C2-I1.3 Project PE_00000019 "HEAL ITALIA".	Financing: 130.720,00 euro

2022-present	Research title: The multifaceted role of Maml1: not only a transcriptional co-activator. New insights in breast cancer. (Role: **PI)**	Grant from Sapienza University. Prot.: RM1221816810D5C2.	Financing: 10.000 euro.
2022-present	Title: Ultrasensitive digital platform as a breakthrough technology to detect and quantify disease surrogate biomarkers in different clinical settings. (Role: **I**)	University Scientific Research Funding Grant – "Acquisizione di Medie e Grandi Attrezzature" scientifiche "Sapienza" University. Code: MA12218166021938	Financing: 48.175 euro.
2022-present	Research title: "Jagged1, a novel non canonical player in pancreatic cancer". (Role: **PI)**	Grant from Istituto Pasteur-Fondazione Cenci Bolognetti Call 2020- Categoria: Anna Tramontano.	Financing: 30.000 euro.
2020-present	Research title: "Jagged1, a novel non-canonical player in pancreatic cancer. Identification of novel target drugs". (Role: **PI)**	Grant from "Progetti di Ricerca Grandi", 2020 (international peer reviewers). Grant from Sapienza University Prot. RG120172B8354E7F.	Financing: 75.000 euro.
2019-2022	Research title: "Development of natural and synthetic compound as kinases inhibitors targeting x cancer cells stem cells". (Role: **I**)	Grant from PRIN 2017-COFIN MUR Code: 2017E84AA4_005.	Financing: 70.000 euro
2019-2022	Research title: "Processi Green per l'estrazione di principi attivi e la depurazione di Matrici di scarto e non", acronimo"Progema" - (Role: **I**)	Participation in Industrial Research and Experimental Development. Italian Ministry of Education, University and Research (MIUR). Code project: ARS01-00432.	Financing: 389.000 euro.
2021-2022	The multifaced role of Maml1: not only a transcriptional cofactor. New insight in cancer biology. Responsabile Dott. Sabrina Zema. Ruolo: **Tutor**	University Scientific Research Funding Grant - "Sapienza" University. Prot.AR22117A8672F911	Financing: 2.000 euro
2019-2020	Research title: "Le gamma- secretasi attivano il processamento di Jagged1: ruolo nella progressione del cancro del colon retto". Responsabile Dott. Francesca Nardozza. Ruolo: **Tutor**	University Scientific Research Funding Grant - "Sapienza" University. Prot. AR11916B7B7EBF3B	Financing: 1.000 euro
2018-2019	Research title: "Maml1: non solo un cofattore trascrizionale nella via di Sonic Hedgehog". Responsabile Dott. Sabrina Zema. Ruolo: **Tutor**	University Scientific Research Funding Grant - "Sapienza" University. Prot. AR11816436592EF8	Financing: 1.000 euro
2017-2018	Research title: "Il ruolo della proteina Jagged1 nel sostenere la	University Scientific Research Funding Grant - "Sapienza"	Financing: 1.000 euro

	progressione del cancro del colon retto.” Responsabile Dott. Sabrina Zema. Ruolo: **Tutor**	University. Prot. AR11715C81BB7C2F	
2016-2018	Research title: “MAML1 acts cooperatively with GLI1 to activate GLI1-regulated Promoters: implications for cerebellum development”. (Role. **PI**)	University Scientific Research Funding Grant - “Sapienza” University. Prot. RP116154CE3DD739	Financing: 5.000 euro
2013-2016	Research title: “Basi molecolari dei processi di carcinogenesi polmonare: caratterizzazione del network trascrizionale e di microRNA a valle delle vie di trasduzione del segnale attive durante lo sviluppo embrionale in cellule staminali tumorali”. Role: **PI** (05/03/2015).	Grant from PRIN 2010-2011 – COFIN MUR Code: 2010W4J4RM_006.	Financing: 224.000 euro.
2013-2016	Research title: "Relationships between Hedgehog and Notch signalling pathways in T cell leukemia/lymphoma”. (Role:**PI**)	University Scientific Research Funding Grant - “Sapienza” University. Prot. C26A1347MF	Financing: 12.000 euro
2012-2015	Research title: “Piattaforme tecnologiche innovative per l’ingegneria tissutale”. Consorzio Pitecnobio – Role: **I** Sapienza Unit.	Italian Minisry of Education, University and Research (MIUR), code: PON01_00829	Financing: 312,692 euro.
2012-2015	“Research title: Molecular dissection of Notch3 signaling in T cell Leukemia: novel mechanistic insight”. (Role: **I**)	Investigator Grant AIRC 2012, code: IG513314	Financing: 360.00 euro.
2011-2015	Research title: “Sviluppo di molecole capaci di modulare vie metaboliche intracellulari redox-sensibili per la prevenzione e la cura di patologie infettive, tumorali, neurodegenerative e loro delivery mediante piattaforme nanotecnologiche”. Consorzio Pitecnobio – . Role: **I** Sapienza Unit.	Italian Ministry of Education, University and Research (MIUR), code: PON01_001802	Financing: 500.800 euro.
2009-2012	Research title: "Notch signalling in Development and Pathology". (Role: **I**)	Grant from European Union-Funding FP7 -PEOPLE-2007-1-1-ITN (Initial Training Network) - NotchIT-PITN-GA-2008-215761.	Financing: 750.000 euro. Total financing: 3.500.000 euro
2009-2011	Research title: “Modulazione delle vie di traduzione del segnale coinvolte nel mantenimento e differenziamento delle cellule staminali: aspetti di base e vie traslazionali”. Role: **PI** of Unit	Grant from “Fondazione Roma”. (code: not available)	Financing: 300.000 euro (Unit).
2009-2010	Research title: "Interazione funzionale fra Notch e Jagged nella leuchemogenesi delle cellule T".	University Scientific Research Funding Grant - “Sapienza” University.	Financing: 10.120,00 euro

	(Role: **PI)**		
2008-2011	Research title: “Dissection of Notch-dependent pathways involved in development of T cell leukemia: insight from mouse models”. (Role: **I**)	Investigator Grant AIRC 2008, code: IG5432	Financing: 360.000 euro
2008-2009	Research title: "Ruolo della cooperazione tra Jagged1e Notch3 nella leucemia a cellule T" (Role: **PI**)	University Scientific Research Funding Grant - “Sapienza” University.	Financing: 8.241,66 euro
2006-2008	Research title: “Analisi dei meccanismi trascrizionali nei processi di sopravvivenza, proliferazione e progressione delle emopatie maligne”. (Role: **I**)	Italian Ministry of Education, University and Research (MIUR) – Bando PRIN 2005-code: 2005068971	Financing: 83.800 euro
2005-2008	Research title: “Functional relationships between Notch and oncogenic transduction pathways in T cell leukemogenesis”. (Role: **I**).	Investigation Grant AIRC 2005, code: IG1603	Financing: 417.810 euro
2004-2008	Research title: "Novel approaches to pathogenesis, diagnosis and treatment of autoimmune diseases based on new insignts into thymus-dependent self-tolerance". (Role: **I**)	Grant from European Union. Sixth Framework Program (FP6) Integrated Project (FP6-2002-LIFESCIHEALT, proposal N0503410; contract LSHB-CT-2003-503410). Acronim: "Eurothymaide".	Financing: 584.000 euro.
2003-2004	Research title: "Applicazioni dell'isolamento di sottopopolazioni cellulari in biomedicina". Role: **PI**.	University Scientific Research Funding Grant – “Acquisizione di Medie e Grandi Attrezzature” scientifiche “Sapienza” University.	Financing: 70.000 euro.
2003-2005	Research title: “Analisi delle vie di attivazione di NF-kB nei processi linfoproliferativi T cellulari: ruolo dell’interazione tra Notch3 e il sistema recettoriale per l’antigene (TCR o pre-TCR)” (Role: **I**)	Italian Ministry of Education, University and Research (MIUR) – Bando PRIN 2003-code: 2003067871_009	Financing: 104.900 euro.
2004-2005	Research title: "Ruolo dell’espressione combinata dei geni Notch3 e pTalpha nella leucemia linfoblastica acuta pediatrica a cellule T". (Role: **PI**)	University Scientific Research Funding Grant - “Sapienza” University.	Financing: 2.538,00 euro
2003-2004	Research title: "Ruolo dell’espressione combinata dei geni Notch3 e pTalpha nella leucemia linfoblastica acuta pediatrica a cellule T". (Role: **PI**)	University Scientific Research Funding Grant - “Sapienza” University.	Financing: 2.585,00 euro
2001-2003	Research title: “Ruolo patogenetico dell’interazione funzionale tra le vie di trasduzione del segnale di Notch3 e del pre-TCR nella leucemia	Italian Ministry of Education, University and Research (MIUR) – Bando PRIN 2001-code: 2001068338_005	Financing: 95.545 euro.

	linfoide T". (Role: **I**)		
2000-2001	Titolo del Progetto: Il "signalling" di Notch3 regola la crescita ed il differenziamento dei timociti allo stadio di transizione pre-T/T: possibile interazione con la via di trasduzione del segnale innescata dal pre-TCR. Role **PI**.	Young Researcher Project. MURST 2000. University Scientific Research Funding Grant - "Sapienza" University.	Financing:10.329, 14 euro.

Part VII – Research Activities

Keywords	Brief Description
-Cancer -Notch signaling -Intrinsic drug resistance -Pre-clinical models -Murine models	Prof. Diana Bellavia's main research field is focused on the canonical and non-canonical Notch signaling pathway, which is directly involved in cancerogenesis processes, metastatic dissemination, and therapeutic resistance in hematologic and solid tumors. It is known that the Notch signaling pathway is directly involved in sustaining the onset/progression of different types of tumors, inducing chemoresistant processes, but the molecular mechanisms are not unraveled yet. The signaling pathway induced by the Notch receptor is very simple, but at the same time very complex since its molecular components can crosstalk with other oncogenic signaling pathways, sustaining tumor cell transformation/aggressiveness and resistance towards pharmacological treatments. In this regard, Prof. Diana Bellavia's research activity aims to unravel the pathogenetic mechanisms that determine the onset/progression of cancer and counteract intrinsic drug resistance, which sustains the survival of tumor cells in colorectal cancer, pancreatic tumor, and breast cancer. In the present period, She is focusing her attention on the identification of novel protein-based prognostic/predictive blood serum biomarkers and new personalized therapeutic approaches, by using cutting-edge technologies (NGS, nuclear protein interactome, ChIP-seq), preclinical *in vitro* study systems (organoids cultures, exosome isolation, co-cultures between tumor cells and tumor microenvironment) and *in vivo* models (by using transgenic and knock-out mice models, orthotopic or PDX/avatar models), starting from established tumor cell lines and/or tumor cells derived from patients.
-Canonical Notch signaling -T-cell differentiation -T-ALL	*1999-2012* As Assistant Professor of General Pathology in the Department of Experimental Medicine, the main research fields of Dr. Diana Bellavia were focused on: 1. development of *in vitro* T cell and thymocyte differentiation models; 2. study of molecular and cellular mechanisms involved in leukemia development and progression; 3) generation and characterization of Notch3 transgenic mouse (Notch3tg^{+}) as a mouse model of human Acute T cell Lymphoblastic Leukemia (T-ALL); 4. identification of molecular markers associated with T-ALL: persistent expression of CD25^{+} and pTα/pre-TCR in lymphoma cells; 3. generation and characterization of Notch3tg^{+}/pTalpha$^{-/-}$ and Notch3tg^{+}/PKCtheta$^{-/-}$ double mutant mice to study the crosstalk between Notch3 and pre-TCR signaling pathways and, similarly, between Notch3 and PKCtheta. 4. Molecular characterization of human T-ALL samples from young patients (under 15 years old). 5. Identification of direct crosstalk among Notch3/pre-TCR and Ikaros, mediated by HuD binding proteins, able to regulate the T cell leukemogenesis in the Notch3tg mouse model. These lines of research have produced works in relevant peer-reviewed journals by first name

	(Bellavia D. et al. EMBO J. 2000, 19:3337; Bellavia D. et al. PNAS 2002, 99:3788; Bellavia D. et al. Seminars in Immunology 2003 15:107-112; Bellavia D. et al. EMBO J 2007, 26:1670; Bellavia D. et al. Cell Cycle 2007 6:2730-4; Bellavia D. et al. Oncogene 2008 27:092-8) and as co-author (Checquolo S. et al. Oncogene 2010 29:1463-74, Barbarulo A. et al. J. Immunol. 2011 186: 6199-206; Cialfi S. et al. Leukemia 2013 27:485-8). During this period, Dr. Diana Bellavia acquired the training expertise and all the necessary skills to assume the role of team leader, which will start when She holds the role of Associate Professor.
	2012-present. As Associate Professor of General Pathology at the Department of Molecular Medicine, Faculty of Pharmacy & Medicine of the "Sapienza" University of Rome, Prof. Diana Bellavia launches new research lines as a group leader. Her deep expertise in Notch signaling pathways allowed her to expand these studies, focusing her attention on the noncanonical role played by Notch ligand Jagged1 and the transcriptional co-activator, Maml1, creating two unexplored lines of research: **1)** Study of the "retrograde" signaling pathway induced by Jagged1 ligand in liquid and solid tumors; **2)** Maml1, as a novel co-activator in the Hedgehog pathway. Currently, Diana Bellavia's research team is composed of: Research fellows (1), postdoctoral fellows (1) (founded by Umberto Veronesi), Ph.D. students (1); interns for master's thesis (2).
-Noncanonical Notch signaling -Jagged1 reverse signaling -Colorectal cancer -Biomarker	1) *Study of the "retrograde" signaling pathway induced by Jagged1 ligand in liquid and solid tumors.* The identification of a non-canonical Notch pathway focused on Jagged1 reverse signaling has recently opened a new and unexplored line of research, characterized by the production of works as last and corresponding authors. - A mutual *cis*-activation between Notch3 and Jagged1, involved in the progression of T-cell leukemia/lymphoma has been her first observation of the existence of a non-canonical pathway sustained by Jagged1 and associated with tumor development (Pelullo et al. Neoplasia 2014, 16:1007). - Then, Prof. D. Bellavia demonstrated the oncogenic role of the retrograde pathway, Jag1-ICD-triggered, directly involved in colorectal cancer (CRC), a very aggressive solid tumor (Pelullo et al., Cancer Research 2019, Pelulo et al., Frontiers in Genetics 2019 and Pelullo et al., Frontiers in Oncology 2022). Bellavia's group demonstrated, for the first time, the existence of the Kras/Erk/ADAM17/Jag1 axis able to induce Jagged1 cleavage and the release of nuclear-targeted Jag1-ICD oncoprotein, directly involved in CRC progression and drug resistance, both *in vitro* and *in vivo* studies. Our preclinical results strongly demonstrated the existence of Jag1ICD-dependent signaling, able to activate an intricate network of signals in CRC, favoring tumor proliferation, EMT/progression, and chemoresistance. Currently, Bellavia's group aims to translate the pre-clinical studies in $APC^{Min/+}$mouse model and human CRC patients to i) investigate Jag1-ICD as a circulating protein-based prognostic/predictive biomarker in CRC patients; ii) identify natural compounds able to switch off Jag1-ICD expression/signaling to overcome drug resistance; iii) study tumor microenvironment (TME); iv) explore the Jag1-ICD-associated "nuclear interactome" to uncover transcription factors directly regulated by Jag1-ICD co- activator, able to sustain tumor progression and drug resistance. - Currently, we are investigating the role of Jagged1 retrograde signaling also in pancreatic cancer (manuscript in preparation). Besides publications in international peer-reviewed journals, the results of research activity have been presented in many national and international

	meetings as posters or oral communications.
Maml1 Itch/E3 ligase Notch Gli1/Hedgehog Breast cancer	*2) Maml1, as a novel co-activator in the Hedgehog pathway.* Prof. Bellavia also focused her attention on the Hedgehog-Notch signaling network, showing a reciprocal synergism that contributes to tumorigenesis. Interestingly, Bellavia's group identified the transcriptional co-activator Maml1 as the convergence point of two signaling pathways. Maml1 shows a critical role in cerebellar development, through *in vitro* and *in vivo* studies ($Maml1^{-/-}$ mouse model), in a Notch-independent manner (Quaranta R. et al Cell Death & Disease 2017: 8,e2942; Zema S. et al Front. In Cell and develop. Biol., 2020). Currently, we are studying a novel role for Maml1 as a negative regulator of Itch E3 ubiquitin ligase, which can regulate the expression of Notch and Gli (Hedgehog pathway) oncoproteins, which are Itch-target proteins. In particular, we have observed that the overexpression of Maml1 can switch off Itch activity and induce an increased expression of Notch and Gli1 in breast cancer, both in the xenograft mouse model and in human patients (manuscript in preparation). Besides publications in international peer-reviewed journals, the results of research activity have been presented in many national and international meetings as posters or oral communications.

Part VIII – Summary of Scientific Achievements

Product type	Number	Data Base	Start	End
Papers [international]	59	https://www.scopus.com https://www.webofscience.com	1994	2023
Papers (international)	34	https://www.scopus.com https://www.webofscience.com	2013	2023
Books [scientific]	1	https://www.scopus.com https://www.webofscience.com	2018	

Total Impact factor	368,531
Impact Factor (2013-2023)	198,393
Average Impact Factor/publication	6,25
Total Citations	2.990
Average Citations per Product	50,67
Hirsch (H) index	29 (Web of Science)
Normalized H index*	1

*H index divided by the academic seniority.

Part IX– Selected Publications

List of the publications selected for the evaluation. For each publication are reported title, authors, reference data, journal IF (at the time of publication), citations, and press/media release (when available). Note: the database Scopus was used to calculate citations.

1. Pelullo Maria, Zema Sabrina, De Carolis Mariangela, Cialfi Samantha, Giuli Maria Valeria, Palermo Rocco, Capalbo Carlo, Giannini Giuseppe, Screpanti Isabella, Checquolo Saula and **Bellavia Diana**. *5FU/Oxaliplatin-Induced Jagged1 Cleavage Counteracts Apoptosis Induction in Colorectal Cancer: A Novel Mechanism of Intrinsic Drug Resistance.* ***Frontiers in Oncology*** 2022 Jul 1; 12:918763 eCollection 2022. doi:10.3389/fonc.2022.918763. PMID: 35847908
   IF 2022: 5.738. Citations: 0 (Database: Scopus)

2. Zema S., Pelullo M., Nardozza F., Felli M. P., Screpanti I., **Bellavia D**. (2020). *A dynamic role of mastermind-like 1. A journey through the main (path)ways between development and cancer*. ***Frontiers in Cell and Developmental Biology***, vol. 8, ISSN: 2296-634X, PMID: 33425921 doi:10.3389/fcell.2020.613557.
   IF 2020: 6.684. Citations: 11 (Database: Scopus)

3. Giuli MV, Diluvio G, Giuliani E, Franciosa G, Di Magno L, Pignataro MG, Tottone L, Nicoletti C, Besharat ZM, Peruzzi G, Pelullo M, Palermo R, Canettieri G, Talora C, d'Amati G, **Bellavia D***, Screpanti I, Checquolo S*. *Notch3 contributes to T-cell leukemia growth via regulation of the unfolded protein response.* ***Oncogenesis.*** 2020 Oct

18;9(10):93. ISSN: 2157-9024. doi: 10.1038/s41389-020-00279-7. PMID: 33071287 ***Co-corresponding Authors.**
IF 2020: 7.485. Citations: 9 (Database: Scopus)

4. Maria Pelullo, Sabrina Zema, Francesca Nardozza, Saula Checquolo, Isabella Screpanti and **Diana Bellavia**. *Title: "Wnt, Notch, and TGF-β Pathways Impinge on Hedgehog Signaling Complexity: An Open Window on Cancer".* ***Frontiers in Genetics,*** 2019. vol. 10, ISSN: 1664-8021, doi: 10.3389/fgene.2019.00711. PMID: 31552081.
IF 2019: 3.789 Citations: 69 (Database: Scopus)

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