



GIADA BASSI

Workplace: Institute of Science, Technology and Sustainability for Ceramics (ISSMC), National Research Council (CNR), Via Granarolo 64, 48018 Faenza (RA), Italy

Researcher in Biology and Biotechnology

Publications: 23 international scientific publications – 447 citations – 88 co-authors – H Index = 11

(Source: <https://www.scopus.com/giadabassi>)

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Scopus Author ID: 57220875280 <https://www.scopus.com/giadabassi>

Google Scholar: <https://scholar.google.com/giadabassi>

LinkedIn: www.linkedin.com/in/giada-bassi

WORK EXPERIENCE

16/12/2024 – present

Researcher, level III – fixed term

ISSMC – CNR, Faenza, Italy, Bioceramics and Biohybrid Composites Group.

Research focus: Cell–material interaction analysis for Regenerative Medicine and Tissue Engineering.

Funded by PNRR PE00000004 project MICS – Made in Italy Circular Sustainable, CUP B53C22004100001. Prot. no. 442827 of 15.11.2024 relating to the Call for Selection no. 400.12 ISSMC PNRR, for the recruitment of no. 1 staff with the profile of Researcher III Liv. published on the InPA recruitment portal on 24.09.2024.

01/11/2021 – 31/10/2024

PH.D. IN MEDICAL BIOTECHNOLOGY XXXVII CYCLE

CURRICULUM "FUNCTIONAL BIOTECHNOLOGY"

Place of work: ISSMC – CNR, 48018, Faenza (RA), Italy. Bioceramics and Composite Biohybrids Group.

Research line: "analysis of cell-material interaction for Regenerative Medicine and Tissue Engineering".

Recruitment location: Department of Neuroscience, Imaging and Clinical Sciences, University "G. d'Annunzio" Chieti – Pescara, 66100, Chieti (CH), Italy. Announcement D.R. n. 885 prot. no. 47539 of 29/06/2021.

ID Number 3224083.

PhD without scholarship, paid through research grants.

Final discussion: 17 March 2025.

Aim of the project: development of a 3D *in vitro* model of osteosarcoma highly predictive of the tumor microenvironment with a focus on the tumor stem cell niche. Design, development and chemical/physical, mechanical and biological characterization of collagen-based scaffolds mineralized with hydroxyapatite nanoparticles (MgHA/Coll) used as extracellular matrix of bone. *Ah hoc* functionalization of scaffolds with hydrogels enriched with biomotives and biomolecules relevant to the tumor microenvironment (TNF-alpha, hyaluronic acid) to mimic the diseased extracellular matrix of osteosarcoma. Cancer stem cells enriched in sarsospheres are used in combination with scaffolds to mimic the niche, along with second cell types and EVs to obtain a complex 3D cell co-culture system. A detailed characterization of serial generations of sarsospheres *in vitro* is carried out and the cell population with the highest tumor properties is selected for the development of the 3D model. Chemical/physical and mechanical characterization techniques, as well as cell and molecular

biology techniques, and a broad morphological analysis are applied on the 3D model to evaluate the cellular behavior in relation to the microenvironmental conditions provided by scaffolds, cells and secretome.

Projects involved:

- [PREDICTOS HORIZON-WIDERA-2021-ACCESS-03-01-TWINNING, grant n. 101079372.](#)
- [STRIKE HORIZON-MSCA-2021-DN, grant n.: 101072462](#)
- [MERCURY project, PRIN2022PNNR MISSIONE 4 COMPONENTE 2 INVESTIMENTO 11 \(N. P202242X25\)](#)
- ["Osteosarcoma and mesenchymal stem cells to assay innovative materials, bioactive injectable bone cements, with drug delivery ability, to contrast spine tumour recurrence and to enhance healthy bone regrowth" PRIN MIUR settore LS 3 – Linea A \(2019-2022\)](#)

15/07/2022 – 15/12/2024

PROFESSIONAL RESEARCH GRANT

Place of work and recruitment: ISSMC – CNR, 48018, Faenza (RA), Italy. Bioceramics and Composite Biohybrids Group. Research line: "analysis of cell-material interaction for Regenerative Medicine and Tissue Engineering".

Funded by the project ["NANOBIOCER: Nano-bioceramics for health and the environment"](#) (DCM.AD007.224) with the reference theme concerning the "development of new nanostructured bioactive ceramics for application in the biomedical and environmental fields" (CUP B59J21026330005). CNR – ISTEC Call n. 073.22.03.02 of 12/04/2022.

13/01/2020 – 12/07/2022

PROFESSIONAL RESEARCH GRANT

Place of work and recruitment: ISSMC – CNR, 48018, Faenza (RA), Italy. Bioceramics and Composite Biohybrids Group. Research line: "analysis of cell-material interaction for Regenerative Medicine and Tissue Engineering".

Funded by [PRIN project "REGROWTH" 2017 CALL LS3 LINEA \(2019-2022\)](#) A prot.1758 of 17/09/2019 (CUP B54I19002180005) "Osteosarcoma and Mesenchymal Stem Cells to assay innovative materials, bioactive injectable bone cements, with drug delivery ability, to contrast spine tumor recurrence and to enhance healthy bone regrowth". Research topic: "Biomimetic approaches for Regenerative Medicine and Nanomedicine for the development of new antitumor strategies". CNR – ISTEC Call n. 073.19.03.18 of 18/11/2019. € 395,830.00 (€ 118,474.00 ISTEC-CNR).

EDUCATION AND TRAINING COURSES

3/09/2025

Training course on "Good Clinical Practice"

Location: Online

Organizer: FormazioneNelFarmaceutico.com

2/07/2025

Webinar on "Advanced Materials for a Sustainable future: bridging research and industrial application"

Venue and organizer: ISSMC – CNR, 48018, Faenza (RA), Italy. Bioceramics and Composite Biohybrids Group.

18/06/2025

Webinar on "Research integrity"

Organizer: Springer Nature

Location: Online

28/05/2025

Webinar on "AI & Scientific Writing"

Organizer: Springer Nature

Location: Online

26/05/2025

Design for sustainability in research and innovation

Venue and organizer: ISSMC – CNR, 48018, Faenza (RA), Italy. Bioceramics and Composite Biohybrids Group.

Topic: concept of LCA, presentation of EcoOptimal LCA&LCC, DEMO session on how to carry out an environmental and economic impact assessment on an experimental research case study

21/05/2025

Webinar on “How do journals operate?”

Organizer: Springer Nature

Location: Online

14/05/2025

Webinar on “The importance of research data”

Organizer: Springer Nature

Location: Online

7/05/2025

Webinar on “How to write a scientific paper”

Organizer: Springer Nature

Location: Online

18/11/2021 – 22/10/2024

Training course on Inverted Fluorescence Microscope and NIS-Elements software

Headquarters: ISSMC – CNR, 48018, Faenza (RA), Italy. Bioceramics and Composite Biohybrids Group.

Organizer: Balsamo Strumenti di A. Balsamo, V. Cesare Battisti 40059 Medicina (BO)

01/11/2021 – 31/10/2024

PH.D. IN MEDICAL BIOTECHNOLOGY XXXVII CYCLE

CURRICULUM "FUNCTIONAL BIOTECHNOLOGY"

Place of work: ISSMC – CNR, 48018, Faenza (RA), Italy. Bioceramics and Composite Biohybrids Group.

Research line: "analysis of cell-material interaction for Regenerative Medicine and Tissue Engineering".

Recruitment location: Department of Neuroscience, Imaging and Clinical Sciences, University "G. d'Annunzio"

Chieti – Pescara, 66100, Chieti (CH), Italy. Announcement D.R. n. 885 prot. no. 47539 of 29/06/2021.

ID Number 3224083.

Projects involved:

- PREDICTOS HORIZON-WIDERA-2021-ACCESS-03-01-TWINNING, grant n. 101079372.
- STRIKE HORIZON-MSCA-2021-DN, grant n.: 101072462
- MERCURY project, PRIN2022PNNR MISSIONE 4 COMPONENTE 2 INVESTIMENTO 11 (N. P202242X25)
- “Osteosarcoma and mesenchymal stem cells to assay innovative materials, bioactive injectable bone cements, with drug delivery ability, to contrast spine tumour recurrence and to enhance healthy bone regrowth” PRIN MIUR settore LS 3 – Linea A (2019-2022)

18/06/2024

PREDICTOS EU PROJECT WORKSHOP ON “EVALUATION OF CELL/BIOMATERIAL INTERACTION” AND NETWORKING EVENT WITH RELEVANT ENTITIES

Place of work: Institute of Science, Technology and Sustainability for Ceramics, ISSMC, National Research Council (CNR), via Granarolo n. 64, 48018, Faenza, Italy
Organising Committee: PREDICTOS EU Consortium

Funded by PREDICTOS - HORIZON-WIDERA-2021-ACCESS-03-01-TWINNING, grant n. 101079372.

“Strengthening excellence for advanced osteosarcoma’s predictive models” (2023-2025) euro 1 375 188 (euro 252. 813,00 ISTEC-CNR). Coordinatore: Tatiana Marisa Fernandes Patricio (Instituto Politecnico de Leiria, Portugal). Consorzio: Instituto Politecnico de Leiria (CDRSP-PL) Portugal, Consiglio Nazionale delle Ricerche (CNR) Italy, Universiteit Maastricht (MERLN) Netherlands, Universite de Liege (ULIEGE) Belgium.

29/01/2024 – 02/02/2024

STRIKE EU 1ST WINTER SCHOOL: COMPLEMENTARY TRAINING ON “EUROPEAN PUBLIC FUNDING SCHEMES FOR R&D AND INNOVATION AND TECHNOLOGY TRANSFER

Place of work: Institute of Science, Technology and Sustainability for Ceramics, ISSMC, National Research Council (CNR), via Granarolo n. 64, 48018, Faenza, Italy
Organising Committee: STRIKE EU Consortium

Funded by STRIKE HORIZON-MSCA-2021-DN, grant n.: 101072462. “comprehensive strategies to tackle malignant tumors: from nanomedicine and theranostic to precision medicine (2023-2027)”. euro 2,106,835.2 (euro 259437.60 ISTEC-CNR). Data di inizio: 01/01/2023. Coordinator: Anna Piperno (University of studies of Messina). Consortium: University of studies of Messina (UNIME) Italy, Consiglio Nazionale delle Ricerche (CNR) Italy, National University of Ireland Maynooth (NUIM), Ireland, Univerzita Palackehov Olomouci (UP), Czechia, Nantes Universite (UN), France, Nanotech Solutions Sociedad Limitada (NTSOL), Spain, Consortium For Genomic Technologisocieta Benefit srl (COGENTECH) Italy, Medizinische Universitaet wien (MUW) Austria.

30/11/2023 – 01/12/2023

PREDICTOS EU 1ST WINTER SCHOOL: STRENGTHENING EXCELLENCE FOR ADVANCED OSTEOSARCOMA’S PREDICTIVE MODELS

Place of work: Maastricht University, MERLN Institute Universiteitssingel 40 UNS40 Building, The Netherlands
Organising Committee: PREDICTOS EU Consortium

Funded by PREDICTOS - HORIZON-WIDERA-2021-ACCESS-03-01-TWINNING, grant n. 101079372.

“Strengthening excellence for advanced osteosarcoma’s predictive models” (2023-2025) euro 1 375 188 (euro 252. 813,00 ISTEC-CNR). Coordinator: Tatiana Marisa Fernandes Patricio (Instituto Politecnico de Leiria, Portugal). Consorzio: Instituto Politecnico de Leiria (CDRSP-PL) Portugal, Consiglio Nazionale delle Ricerche (CNR) Italy, Universiteit Maastricht (MERLN) Netherlands, Universite de Liege (ULIEGE) Belgium.

06/02/2023 – 10/02/2023

XXVII SCHOOL OF PURE AND APPLIED BIOPHYSICS. EXTRACELLULAR VESICLES: FROM BIOPHYSICAL TO TRANSLATIONAL CHALLENGES

Location: Palazzo Franchetti, Venice (VE), Italy. Organizing committee: Italian Society of Pure and Applied Biophysics (SIBPA), Veneto Institute of Sciences, Letters and Arts (IVSLA), Italian Society for Extracellular Vesicles (EVIta) and H2020. FET Proactive project BOW.

Selection based on the Poster: “*In vitro* 3D Tumour Engineering of osteosarcoma: serial sarcospheres and scaffold-based seeding as cancer-specific instructive microenvironment of CSC-niche”.

Funded by MIS-RIGENERA "Innovative technology for the regeneration of the injured spinal cord" PNRM ITALIAN MINISTRY OF DEFENSE – National Military Research Plan (2020-2023) euro 190 000. Contract No.: N.14 (Ministry of Defense – General Directorate of Commissariat and General Services). Protocol No.: 130/2020 ISTEC-CNR and 0001613/2020 ISTEC-CNR.

27/07/2022 – 31/07/2022

ACCADEMIA DI NANOGAGLIATO 2022. INNOVATING WITH NATURE: ADVANCES IN RNA, DNA AND MORE

Location: Gagliato (CZ), Italy. Organizing Committee: Accademia di Gagliato Globale

Funded by: Accademia di Gagliato Globale

08/06/2022 – 10/06/2022

SCHOOL OF NANOMEDICINE 2022. NANOMATERIALS FOR NANOMEDICINE, TISSUE ENGINEERING, FROM BENCH TO BED, THERAPEUTICS NANOTECHNOLOGICAL APPROACHES.

Location: Conference room, CNR headquarters, Rome. Organizing Committee: Department of Chemical Sciences and Materials Technologies, CNR. Institute of Crystallography, CNR.

Selection based on the Poster: "*In vitro* 3d scaffold-based osteosarcoma models as tumor engineering approach against cancer stem cells niche". Poster: "Graphene oxide nanoplatfroms to enhance Pt-based drug delivery in osteosarcoma anticancer therapy".

Funded by NANO4TARMED H2020-WIDESPREAD-2020-5-952063 "Advanced hybrid theranostic nanoplatfroms for an active drug delivery in the cancer treatment" (2021-2023). euro 744,898 (159,195 for ISTEC-CNR). Coordinator: Vaclav Ranc (Univerzita Palackeho V Olomouci (CZ). Consorzium: 3 partner (Univerzita Palackeho V Olomouci; National University of Ireland Maynooth; ISTEC-CNR). Grant agreement No. 952063.

17/05/2021 – 21/05/2021

JRC SUMMER SCHOOL 2021 "NON-ANIMAL APPROACHES IN SCIENCE. THE THREE R... EVOLUTION"

Location: Ispra, Italia. Organizing Committee: European Commission's Joint Research Centre (JRC) e EU Reference Laboratory for alternatives to animal testing (EURL ECVAM). Poster: "Tumor Engineering 3D approaches as more predictive *in vitro* preclinical models. Scaffold-based 3D cellular models mimicking the heterogeneity of osteosarcoma stem cell niche".

Pubblication SAGE PUBLICATIONS LDT: <https://journals.sagepub.com/doi/full/10.1177/02611929211065919>

09/2017 – 09/2019

MASTER'S DEGREE IN BIOTECHNOLOGY FOR THE ENVIRONMENT AND HEALTH (LM-8)

University of Ferrara (FE), via Luigi Borsari, 46, 44121 Ferrara (FE), Italy Field

of study: Life Sciences and Biotechnology

Graduation grade: **110 laude**. Degree and parchment issued by the University of Ferrara on 27/09/2019.

Thesis in Cellular Biochemistry and Regenerative Medicine "Cancer Stem Cells and Biomimetic Materials for the *in vitro* development of a 3D model of osteosarcoma". Thesis supervisors: Prof. Maria Roberta Piva, University of Ferrara. Co-supervisor: Dr. Monica Montesi, ISSMC – CNR, and Dr. Silvia Panzeri, ISSMC – CNR.

9-month Curricular Internship (January 2019 – September 2019) at **ISSMC – CNR, 48018, Faenza (RA)**, Italy. Bioceramics and Composite Biohybrids Group. Research line: "analysis of cell-material interaction for Regenerative Medicine and Tissue Engineering".

09/2014 – 09/2017

BACHELOR OF SCIENCE IN BIOLOGICAL SCIENCES (L-13)

University of Ferrara (FE), via Luigi Borsari, 46, 44121 Ferrara (FE), Italy.

Field of study: Life Sciences

Graduation mark: 98/110. Degree and parchment issued by the University of Ferrara on 28/09/2017. Thesis in Pharmacology "Signaling pathways involved in the anti-inflammatory effect induced by low-frequency pulsed electromagnetic fields on LPS-stimulated murine microglia cells". Thesis supervisor: Prof. Stefania Gessi. Curricular Internship of 3 months (January 2017 – April 2017) at the Department of Medical Sciences, University of Ferrara (FE).

5/07/2014

HIGH SCHOOL DIPLOMA IN LANGUAGES

Liceo Classico "Dante Alighieri", Linguistic address. Piazza Anita Garibaldi, 2, 48121 Ravenna (RA), Italy

Languages: English, Spanish, French. High school graduation mark: 73/100

PERIODI DI RICERCA ALL'ESTERO

01/04/2024 – 31/05/2024. OFF-SITE RESEARCH RELATED TO THE PHD PROGRAM

Location: Center for Nanotechnology Innovation@NEST, Italian Institute of Technology, Pisa, Italy, supervisor prof. Valerio Voliani.

Funded by: PREDICTOS - HORIZON-WIDERA-2021-ACCESS-03-01-TWINNING, grant n. 101079372.

"Strengthening excellence for advanced osteosarcoma's predictive models" (2023-2025) euro 1 375 188 (euro 252. 813,00 ISTEC-CNR). Coordinator: Tatiana Marisa Fernandes Patricio (Instituto Politecnico de Leiria, Portugal). Consorzium: Instituto Politecnico de Leiria (CDRSP-PL) Portugal, Consiglio Nazionale delle Ricerche (CNR) Italy, Universiteit Maastricht (MERLN) Netherlands, Universite de Liege (ULIEGE) Belgium.

Research activity: *in vivo* implantation in Chicken embryo Chorioallantoid membrane (CAM model) of 3D models based on osteosarcoma scaffolds and sarcospheres developed *in vitro*, for the evaluation of tumorigenic properties and the evaluation of resistance to chemotherapeutic agents, in order to evaluate the predictivity of 3D models as preclinical platforms.

06/11/2022 – 27/11/2022. SHORT TERM MOBILITY PROGRAM 2022.

From: *Institut de Cancerologie de l'Ouest, Nantes, France*. Research group of "tumor heterogeneity and personalized medicine", coordinated by prof. Dominique Heymann.

Project: SAC. AD002.045 Short Term Mobility Program (STM) GAE

P0000148 Call for Short Term Mobility Program

Research activities: design, development and chemical/physical, mechanical and biological characterization of 3D models of *in vitro* cell co-culture predictive of osteosarcoma for the study of the role and clonal evolution of tumor cells in the presence of a healthy phenotype.

03/10/2022 – 10/10/2022. SHORT TERM EXCHANGE NELL'AMBITO DEL PROGETTO EUROPEO NANO4TARMED.

Location: *Palàcky University of Olomouc, Czech Republic*.

Finanziato da NANO4TARMED H2020-WIDESPREAD-2020-5-952063 "Advanced hybrid theranostic nanoplatfroms for an active drug delivery in the cancer treatment" (2021-2023). euro 744,898 (159,195 for ISTEC-CNR). Coordinator: Vaclav Ranc (Univerzita Palackeho V Olomouci (CZ). Consorzium: 3 partner (Univerzita Palackeho V Olomouci; National University of Ireland Maynooth; ISTEC-CNR). Grant agreement No. 952063.

Research activities: design, development and chemical/physical, mechanical and biological characterization of 3D models of cell culture and testing of nanoparticle systems as drug delivery systems. Optimization of the technical-practical limitations given by the use of biomaterials in biology

LECTURES AND SEMINARS

13/11/2024. Year III PhD Seminar. Presentation of the results obtained on the research topic of the PhD entitled "3D Tumour Engineered models of osteosarcoma mimicking *in vivo* tumour complexity". Location: Department of Neuroscience, Imaging and Clinical Sciences, University "G. d'Annunzio" Chieti – Pescara, 66100. University tutor: Prof. Stefania Fulle. ISSMC tutor: Monica Montesi.

24/10/2023. Year II PhD Seminar. Presentation of the results obtained on the research topic of the PhD entitled "3D Tumour Engineered models of osteosarcoma mimicking *in vivo* tumour complexity". Location: Department of Neuroscience, Imaging and Clinical Sciences, University "G. d'Annunzio" Chieti – Pescara, 66100. University tutor: Prof. Stefania Fulle. ISSMC tutor: Monica Montesi.

25/07/2023. Seminario sul 3D tumour engineering e 3D drug/nanoplatfroms testing nell'ambito del PROGETTO EUROPEO **NANO4TARMED**, dal titolo "3D Tumour Engineered models of osteosarcoma stem cell niche mimicking *in vivo* tumour complexity". Presso: ISSMC, CNR, Faenza, Italia. Finanziato da NANO4TARMED H2020- WIDESPREAD-2020-5-952063 "Advanced hybrid theranostic nanoplatfroms for an active drug delivery in the cancer treatment" (2021-2023). euro 744,898 (159,195 for ISTEC-CNR). Coordinator: Vaclav Ranc (Univerzita Palackeho V Olomouci (CZ). Consorzium: 3 partner (Univerzita Palackeho V Olomouci; National University of Ireland Maynooth; ISSMC-CNR). Grant agreement No. 952063

18/11/2022. Seminar for the presentation of the Cell-BioMaterial Lab of ISSMC, CNR, Faenza, and research projects concerning *in vitro* 3D tumour Engineering and nanosystems, within the **SHORT TERM MOBILITY 2022** program. From: Institut de Cancerologie de l'Ouest, Nantes, France. Research group of "tumor heterogeneity and personalized medicine", coordinated by prof. Dominique Heymann.
Project: sac.ad002.045 Short Term Mobility Program 2022 (STM) GAE
p0000148 call for Short Term Mobility Program

4/10/2022. Seminario sul 3D tumour engineering e 3D drug/nanoplatfroms testing nell'ambito del PROGETTO EUROPEO **NANO4TARMED** dal titolo "Overcoming the limitations of standard 2d cell culture systems: benefits and issues of *in vitro* 3D tumour engineering approaches as predictive platforms for drug screening". Presso: Palacky University of Olomouc, Repubblica Ceca. Finanziato da NANO4TARMED H2020-WIDESPREAD-2020-5-952063 "Advanced hybrid theranostic nanoplatfroms for an active drug delivery in the cancer treatment" (2021- 2023). euro 744,898 (159,195 for istec-cnr). Coordinator: Vaclav Ranc (Univerzita Palackeho V Olomouci (cz). consorzium: 3 partner (Univerzita Palackeho V Olomouci; National University of Ireland Maynooth; ISSMC-CNR). Grant agreement no. 952063.

ORAL PRESENTATIONS

8/07/2024 – 10/07/2024. First author and presenting author in "3D Tumour Engineered Models of Osteosarcoma Stem Cells Niche: *In vitro* and *In vivo* Drug Resistance evaluation". Società Italiana Biomateriali – SIB2024, MIC Faenza, Italy.

13/06/2024 – 15/06/2024. First author and presenting author in "Advanced Tumour Engineered 3D Models of Osteosarcoma as *in vitro* predictive preclinical platforms" come flash presentation. EuSARC 2024, Le Pouliguen, France.

27/03/2023 – 31/03/2023. First author and presenting author in "*In vitro* 3D osteosarcoma models of CSCs-niche: optimization of serial sarcospheres and scaffold-based seeding as cancer-specific instructive microenvironment". TERMIS EU chapter, Manchester, UK.

05/09/2021 – 09/09/2021. First author and presenting author in "Scaffold-based 3d cellular models mimicking the heterogeneity of osteosarcoma stem cell niche". European Society for Biomaterials – ESB 2021, Porto, Portogallo

POSTER PRESENTATIONS

8/07/2024 – 10/07/2024. First author and presenting author in “Enhancing excellence for the development of 3d advanced predictive models of osteosarcoma for the investigation of therapeutic mechanisms” come Fire Poster Presentation. Società Italiana Biomateriali – SIB2024, MIC Faenza, Italy

24/06/2024 – 29/06/2024. First author and presenting author in “Reciprocal Interactions between Osteosarcoma Cells and Mesenchymal Stem Cells: exploring *in vitro* Co-Culture Models in 2D and 3D Scaffold Environment”. TERMIS World Congress, Seattle, Washington, USA.

24/06/2024 – 29/06/2024. First author and presenting author in “Enhancing excellence for the development of advanced predictive and therapeutic models for osteosarcoma” TERMIS World Congress, Seattle, Washington, USA.

13/06/2024 – 15/06/2024. First author and presenting author in “Enhancing excellence for the design, development and investigation of advanced predictive and therapeutic osteosarcoma models”. EuSARC 2024, Le Pouliguen, France

20/09/2022 – 23/09/2022. First author and presenting author in “3D bioceramic scaffolds as cancer-specific instructive microenvironment”. Bioceramics32nd Symposium and Annual Meeting of the International Society for Ceramics in Medicine, Venezia Mestre, Italia

TEACHING ACTIVITIES AND SCIENTIFIC COMMUNICATION

15/05/2025. Open Day ISSMC, CNR. Location: ISSMC – CNR, Cell-Material BioLab.

03/2025. Tutor and Teacher, Dante Alighieri Primary School in Cesena (FC).

11/2024. Tutor and Lecturer for the STEM Together Project of the PNRR Mission 4 – Education and Research Component 1 – Ministerial Decree 65/2023, "A. Baccarini" Comprehensive Institute of Russi (RA).

27/09/2024. European Researchers' Night. Location: ISSMC-CNR

10/ 2023. Co-supervisor and commission Master's Degree of Francesca Berducci, Alma Mater Studiorum, University of Bologna. Academic year 2022-2023.

13/04/2023. Open Day ISSMC, CNR, XXIII Scientific Week of Faenza. 100 years of ceramics: from the pyramids to the space station. Location: ISSMC – CNR

02/02/2023. Prot. n. 0021250 of 26/01/2023 - UOR: 729 carrying out teaching activities within the project "The language of research - LDR Biomedical- Cell-biomaterial interaction". Valeriani Scientific High School of Imola, Prof. Catarinella. Location: ISSMC – CNR

30/11/2022. Prot. n. 0021250 of 26/01/2023 - UOR: 729 carrying out teaching activities in the IFTS apprenticeship training course. ISSMC as a member of the CTs of the project "product and process industrialization technician to enhance the excellence of Emilia-Romagna ceramics" with IFTS national specialization (MIUR decree 07/02/2013) of "product and process industrialization technician". Location: ISSMC – CNR

13/06/2022 – 01/07/2022. Tutoring activities of the student Chiara Melandri as part of the school-work alternation. draft agreement for the training and orientation internship for the 2021-2022 school year with the Torricelli-Ballardini high school in Faenza (ra). From 13/06/22 to 1/07/22 for a total of 108 hours.

AWARDS AND RECOGNITIONS

20/09/2022 – 23/09/2022

BEST POSTER PRESENTATION AWARD. Released and funded by **JECS TRUST**, presso Bioceramics32nd Symposium and Annual Meeting of the International Society for Ceramics in Medicine 2022, Venezia Mestre (VE), Italy

27/07/2022 – 31/07/2022

"MAESTRA MARIA TERESA PIPERATA" AWARD. Released and funded by Accademia Nanogagliato 2022, Accademia Gagliato Globale. Selection based on the Curriculum Vitae.

ROLES AND MEMBERSHIPS

13/10/2023

CO-SUPERVISOR AND PART OF THE COMMISSION of Francesca Berducci's master's degree session. Health Biology Course, Nutrition Curriculum. University of Bologna Alma Mater Studiorum.

20/09/2022 – 23/09/2022

STAFF MEMBER of the congress "Bioceramics32nd Symposium and Annual Meeting of the International Society for Ceramics in Medicine", Venice Mestre, Italy. Role: reception of guests at the desk, IT assistance.

CALLS AND COMPETITIONS

18/04/2023

Graduatoria BANDO PNRR ECS_00000033 ECOSYSTEM FOR SUSTAINABLE TRANSITION IN EMILIA-ROMAGNA MUR Directorial Decree no. 0001052 of 23/06/2022. CALL N. 400. 2 for the recruitment of a fixed-term contract staff with the professional profile of Level III Researcher, at the Institute of Science, Technology and Sustainability for the Development of Materials Caramici ISSMC-CNR - Faenza (RA) headquarters, for the topic "Materials for sustainability and ecological transition" of Spoke 1 of the project. **3rd place in the ranking.**

EUROPEAN PROJECTS

- **key personnel** PREDICTOS HORIZON-WIDERA-2021-ACCESS-03-01-TWINNING, grant n. 101079372. PREDICTOS "Strengthening excellence for advanced osteosarcoma's predictive models" (2023-2025) euro 1 375 188 (euro 252. 813,00 ISTEC-CNR). Coordinator: Tatiana Marisa Fernandes Patricio (Instituto Politecnico de Leiria, Portugal). Consorzio: Instituto Politecnico de Leiria (CDRSP-PL) Portugal, Consiglio Nazionale delle Ricerche (CNR) Italy, Universiteit Maastricht (MERLN) Netherlands, Universite de Liege (ULIEGE) Belgium.
Project aim: to improve the administrative and research management capacities of the Leiria Polytechnic Institute (PL), Centre for Rapid and Sustainable Product Development (CDRSP-PL), as well as scientific and technological excellence, in particular in the field of *in vitro* and *in silico* predictive models to study new therapies against osteosarcoma (OS). The research component of PREDICTOS will be based on biomimicry strategies and will investigate the development of the best *in vitro* and *in silico* 3D models mimicking the OS environment to study therapeutic mechanisms, as well as a proof of concept of the methods will be studied by proposing a therapy using magnetic materials and magnetic stimulation, in order to develop better therapies.

Project activities: design, development, functionalization and chemical/physical, mechanical and biological characterization of scaffold-based 3D models of mono and co-cultures *in vitro* that mimic the complexity of OS and in the biological characterization of these new systems through the study of cell-biomaterial interaction and molecular response, in order to have *in vitro* responses during drug testing and basic biology studies (published article: **Bassi, Giada**; Campodoni, Elisabetta; Rossi,

Arianna; Sandri, Monica; Sarogni, Patrizia; Fulle, Stefania; Voliani, Valerio; Panseri, Silvia; Montesi, Monica, 3D Tumor-Engineered Model Replicating the Osteosarcoma Stem Cell Niche and In Vivo Tumor Complexity" ACS Applied Materials & Interfaces <https://doi.org/10.1021/acsami.4c02567>, Impact factor: 9.5).

- **key personnel** STRIKE HORIZON-MSCA-2021-DN, grant n.: 101072462. "comprehensive strategies to tackle malignant tumors: from nanomedicine and theranostic to precision medicine (2023-2027)". euro 2,106,835.2 (euro 259437.60 ISTECCNR). Coordinator: Anna Piperno (Università di Messina). Consorzio: Università degli Studi di Messina (UNIME) Italy, Consiglio Nazionale delle Ricerche (CNR) Italy, National University of Ireland Maynooth (NUIM), Ireland, Univerzita Palackeho Olomouci (UP), Czechia, Nantes Université (UN), France, Nanotech Solutions Sociedad Limitada (NTSOL), Spain, Consortium For Genomic Technologysocieta Benefit srl (COGENTECH) Italy, Medizinische Universitaet wien (MUW) Austria.

Aim of the project: STRIKE-DN aims to create an innovative MSCA training network with a long-term vision for the development of technological innovations for the treatment of cancer: i) magnetic-reactive nano-hybrid materials for diagnosis and therapy, ii) therapy and targeted diagnosis for osteosarcoma (OS); iii) liquid biopsy for an innovative early diagnosis of breast cancer.

Project activities: design, development, biofunctionalization and chemical/physical, mechanical and biological characterization of 3D models of cell culture based on MgHA/Coll scaffolds mimicking the complexity of OS and in the biological characterization of these new systems through the study of cellular interaction and molecular response in 2D and 3D scaffold-based in vitro multicellular models, in order to have more predictive *in vitro* responses.

- **key personnel** NANO4TARMED H2020-WIDESPREAD-2020-5-952063 "Advanced hybrid theranostic nanoplatforams for an active drug delivery in the cancer treatment" (2021-2023). euro 744,898 (159,195 for ISTECCNR). Coordinator: Vaclav Ranc (Univerzita Palackeho V Olomouci (CZ). Consorzio: 3 partner (Univerzita Palackeho V Olomouci; National University of Ireland Maynooth; ISTECCNR).

Project aim: The project aims to develop new nanomedicine systems for controlled drug release in cancer therapies. Different nanomaterials and drugs will be tested and will constitute innovative platforms that will be evaluated for their cytotoxicity and bioactivity.

Project activities: in vitro testing of the potential cytotoxicity and bioactivity of innovative nanosystems, nanomaterials and anticancer drugs. Design, development, physical/chemical, mechanical and biological characterization of tumor cell 3D models as predictive systems of the microenvironment *in vivo* and used to test the nanosystems, nanomaterials and drugs in question.

PROGETTI NAZIONALI

- **key personnel:** "Development of multidimensional *in vitro* model mimicking the osteosarcoma CSCs-tumour microenvironment complexity" MERCURY project, PRIN2022PNNR MISSIONE 4 COMPONENTE 2 INVESTIMENTO 11 (N. P202242X25). 3 partners: Prof. Angela Scala (Università di Messina), Prof. Donatella Canistro (University of Bologna).

Project aims: MERCURY proposes to develop multidimensional *in vitro* (3D-MMo) models as advanced and alternative cell culture systems that mimic the biological complexity of osteosarcoma. More preclinical predictive models will be developed using a tumor engineering approach with the aim of increasing the success of *in vitro* studies of basic and applied biology for the development of new therapies for the treatment of osteosarcoma. In fact, an important topic in biomedical science is represented by the implementation of more predictive preclinical models of human tissues to significantly increase the knowledge of physiological and pathological processes, the discovery of new drugs and drug screening. In this project, three research units are involved and will exploit different technologies and expertise, working in synergy and in an interdisciplinary manner to address this challenge, promote the national research system and strengthen interactions between universities and research institutions in line with the objectives set by the National Recovery and Resilience Plan (NRP).

Project activities: design, development, functionalization and chemical/physical, mechanical and biological characterization of scaffold-based 3D models of mono and in vitro co-cultures based on sarcospheres and Mesenchymal Stem Cells (MSCs) mimicking the complexity of OS, with particular attention to the induction of Tumour-associated Fibroblasts (TAFs) and in the biological characterization of these new systems through the interaction study cell-biomaterial and molecular response, in order to have more predictive *in vitro* responses during drug testing and basic biology studies.

- **key personnel:** "Osteosarcoma and mesenchymal stem cells to assay innovative materials, bioactive injectable bone cements, with drug delivery ability, to contrast spine tumour recurrence and to enhance healthy bone regrowth" PRIN MIUR settore LS 3 – Linea A (2019-2022) euro 395.830,00 (118.474,00 ISTEC-CNR). N. prot.: 2017c8ryss_002. Other Italian or foreign partners of the project: University of Ferrara (coordinator).

Aim of the project: the project aims to develop medicated, bioactive and bioresorbable injectable pastes (bone cements based on substituted biominetic apatite and strontium), with self-hardening properties, able both to provide effective therapeutic results against tumor growth and proliferation and to induce the regeneration of healthy tissue. These devices will be evaluated *in vitro* by studies of cell and molecular biology, genetic and epigenetic parameters, while best-in-class materials will be tested *in vivo* in the relevant animal model. Thanks also to the design and development of complex cell culture systems (3D cancer models) that more faithfully recapitulate the pathophysiology of the tumor (osteosarcoma), the potential of these innovative medicated devices that combine anti-tumor action with the regenerative action of healthy tissue will be evaluated.

Project activities: design and characterization of the ideal conditions for drug functionalization on biomimetic hydroxyapatite ceramic nanoparticles for the development of injectable paste. Design, design, development and chemical/physical, mechanical and biological characterization of 3D cellular models of osteosarcoma based on mineralized collagen scaffolds and tumor spheroids (published article: **Bassi, G.**; Panseri, S.; Dozio, S.M.; Sandri, M.; Campodoni, E.; Dapporto, M.; Sprio, S.; Tampieri, A.; Montesi, M. Scaffold-based 3D cellular models mimicking the heterogeneity of osteosarcoma stem cell niche. Scientific reports 2020, 10, 22294. DOI: 10.1038/s41598-020-79448-y; PMID: 33339857, Impact factor) as predictive platforms of the tumor microenvironment. Recently, serial spheroids of osteosarcoma have been characterized *in vitro* and the best generation has been selected for the 3D model. Optimization of 3D cell seeding by injection of tumor spheroids. Due to the lockdown due to the covid-19 pandemic, we have obtained an extension of all scientific reporting deadlines.

- **key personnel:** MIS-RIGENERA "Innovative technology for the regeneration of the injured spinal cord" PNRM ITALIAN MINISTRY OF DEFENSE – National Military Research Plan (2020-2023) € 190 000. Contract No.: No. 14 (Ministry of Defence – General Directorate of Commissariat and General Services). Protocol No.: 130/2020 ISTEC-CNR and 0001613/2020 ISTEC-CNR.

Project aims: The project proposes a new strategy aimed at stimulating the regeneration of chronic spinal injuries through a biomimetic hydrogel capable of aligning itself once injected into the injured tissue thanks to the application of an external magnetic field. Functional regeneration/reconnection will be modulated by exosomes derived from mesenchymal stem cells and a controlled ion release. Magnetic stem cells are proposed as advanced cell therapy to increase regenerative potential.

Project activities: in vitro chemical-physical and biological characterization of micro-systems for the release and development of an injectable hydrogel aligned by static magnetic field (published article: Arianna Rossi, Franco Furlani, **Giada Bassi**, Carla Cunha, Alice Lunghi, Filippo Molinari, Francisco J. Teran, Florigio Lista, Michele Bianchi, Anna Piperno, Monica Montesi, Silvia Panseri. Contactless magnetically responsive injectable hydrogel for aligned tissue regeneration. Materials Today Bio, Volume 27, 2024, 101110, ISSN 2590-0064, <https://doi.org/10.1016/j.mtbio.2024.101110>).

TECHNICAL REPORTS

RT-2022-40. Operator and author of technical report for the client FIN-CERAMICA FAENZA SpA via Granarolo 117/3 Faenza (RA). Study for the "Biological characterization on MioRegen samples". N. Prot. ISTEC- CNR 2325_2022 of 30/11/22 Issue 29/11/22. Offer nr. SP-2020/001. M.P02.01 rev.3 of 25/10/22.

RT-2020-75. Operator and author of technical report for the client FIN-CERAMICA FAENZA SpA via Granarolo 117/3 Faenza (RA). Study for the "Biological Characterization of MaioRegen Prime scaffolds - Cartilage 100% collagen, Bone 30/70% collagen/HA, 60/40% collagen/HA". Issue 8/09/2020. Offer nr. MMo-2020/001. M.P02.01 rev.2 of 18/03/13.

SCIENTIFIC PUBLICATIONS

- Rossi A, Bassi G, Cunha C, Baldisserri C, Ravaglia N, Gardini D, Molinari F, Lista F, Teran FJ, Piperno A, Montesi M, Panseri S. Magnetically induced anisotropic structure in an injectable hydrogel for skeletal muscle regeneration. J Colloid Interface Sci. 2024 Sep 16;678(Pt C):334-345. doi: 10.1016/j.jcis.2024.09.121. Epub ahead of print. PMID: 39298986.

Role: **Au pair co-author**

Impact factor: **9.4**

Activity: Volumetric muscle loss (VML) can exceed the inherent regenerative potential, leading to fibrosis and impairments. Autologous muscle grafting, the current gold standard, is limited by tissue availability and success rates. In this article, a tunable injectable hydrogel capable of achieving a post-injection aligned architecture via a low-intensity static magnetic field (SMF) was developed as a minimally invasive approach. The hydrogel formulation uses gellan gum as the base polymer, enriched with essential extracellular matrix components such as hyaluronic acid and type I collagen, improving biofunctionality. Type I collagen is coupled with magnetic iron oxide nanoparticles, creating magnetic collagen (MagC) beams that align within the hydrogel when exposed to an SMF.

- Lorenzo Degli Esposti, Damiano Squiteri, Camilla Fusacchia, **Giada Bassi**, Riccardo Torelli, Davide Altamura, Erika Manicone, Silvia Panseri, Alessio Adamiano, Cinzia Giannini, Monica Mnotesi, Francesca Bugli, Michele Iafisco, Bioinspired oriented calcium phosphate nanocrystals arrays with bactericidal and osteogenic properties. Accepted by Acta Biomaterialia.

Role: **Au pair co-author**

Impact factor: **9.4**

Activity: antibacterial nanostructured surfaces based on bioactive calcium phosphate nanocrystals have been developed with the aim of killing bacteria on contact and at the same time promoting the regeneration of damaged bone tissue following the resolution of the infection, overcoming the limitation of common antibacterial surfaces developed with inert materials. The amorphous calcium phosphate nanocrystals were developed by a growth process inspired by biomineralization. The surfaces showed effective antibacterial activity against both Gram-negative (*P. aeruginosa*) and Gram-positive (*S. aureus*) typically resistant to antibiotics, and an excellent induction of proliferation and viability of mammalian cells. Finally, human mesenchymal stem cells showed excellent adhesion, colonization and induction of the osteogenic differentiation process.

- Arianna Rossi, Franco Furlani, **Giada Bassi**, Carla Cunha, Alice Lunghi, Filippo Molinari, Francisco J. Teran, Florigio Lista, Michele Bianchi, Anna Piperno, Monica Montesi, Silvia Panseri. Contactless magnetically responsive injectable hydrogel for aligned tissue regeneration. Materials Today Bio, Volume 27, 2024, 101110, ISSN 2590-0064, <https://doi.org/10.1016/j.mtbio.2024.101110>.

Role: **Au pair co-author**

Impact factor: **8.7**

Citations: 1

Activity: A biomimetic and magnetic field-responsive injectable hydrogel has been developed with gellan gum, hyaluronic acid, collagen and magnetic nanoparticles, in order to achieve a non-invasive and magnetically controlled surgical approach that promotes the regeneration of aligned human tissues (such as skeletal muscle, spine, cartilage, tendon). *In vitro* results show absence of cytotoxicity and inflammation, an increase in fibroblast proliferation and pro-regenerative activity by macrophages. The *in vivo* pilot study confirms the biocompatibility of hydrogel and its ineptability.

- **Bassi, Giada**; Campodoni, Elisabetta; Rossi, Arianna; Sandri, Monica; Sarogni, Patrizia; Fulle, Stefania; Voliani, Valerio; Panseri, Silvia; Montesi, Monica, "3D Tumor-Engineered Model Replicating the Osteosarcoma Stem Cell Niche and In Vivo Tumor Complexity" ACS Applied Materials & Interfaces. 2024-10-01 | Journal article DOI: [10.1021/acsami.4c02567](https://doi.org/10.1021/acsami.4c02567)

Role: first author

Impact factor: **9.5**

Activities: Two in vitro 3D models of osteosarcoma focused on the tumor stem cell (CSCs) niche have been designed, developed and characterized as predictive models of the tumor microenvironment in vivo. A hybrid scaffold based on mineralised collagen (MgHA/Coll) was characterised in terms of chemical/physical, mechanical and biological properties, and used to mimic the extracellular matrix of bone tissue. CSCs were enriched in sarcospheres, characterized in terms of serial *in vitro* generations and combined with scaffolds to obtain a 3D model of tumor cell culture by optimizing two seeding approaches based on injection into the scaffold, in order to create a tumor niche closed at 360°C. The complete 3D system was analyzed in terms of cell-biomaterial interaction and molecular response of CSCs in the two types of microenvironments derived from the two seeding approaches. Finally, the tumorigenic properties of the two *in vivo* models in chorioallantoic membrane of chicken embryo (CAM model) were evaluated, in order to understand whether they were able to induce the development of a tumor mass.

- Rossi, C. Stagno, A. Piperno, N. Iraci, S. Panseri, M. Montesi, M. Feizi-Dehneyebi, G. Bassi, M. L. Di Pietro, N. Micale, *Appl Organomet Chem* 2024, 38(5), e7403. <https://doi.org/10.1002/aoc.7403>.

Tipologia: Journal article

Role: Au pair co-author

Impact factor: **3.7**

Citations: 14

Activity: a consistent series of Pt (II) polypyridyl complexes (i.e., LDP-10–25) underwent extensive biological investigations to verify their activity profile as target-based anticancer agents. Preliminary in vitro screening at 10 µM against three tumor cell lines known to overexpress DNA G-4 (MDA-MB 231, U87, and U2-OS) pointed out that four of them, namely, LDP-15, LDP-16, LDP-24, and LDP-25, had promising cytotoxic activity compared with cisplatin. These four compounds were selected for continuous assays against the same three cell lines and morphological analyses on U2-OS cells that showed IC50 values in the micromolar range and remarkable changes in nuclei shape and cytoskeleton integrity, respectively. In addition, in silico ADME-Tox profiling studies showed no risk of tumorigenic, irritant, or reproductive effects for the title compounds. DFT calculations were used to verify the structural characteristics of the four selected compounds and to investigate their electronic behavior.

- Roberto Oliva, Serena Maria Torcasio, Olivier Coulembier, Anna Piperno, Antonino Mazzaglia, Silvia Scalese, Arianna Rossi, Giada Bassi, Silvia Panseri, Monica Montesi, Angela Scala, RGD-tagging of star-shaped PLA-PEG micellar nanoassemblies enhances doxorubicin efficacy against osteosarcoma, *International Journal of Pharmaceutics*, Volume 657, 2024, 124183, ISSN 0378-5173, <https://doi.org/10.1016/j.ijpharm.2024.124183>

Type: Journal article

Role: Peer co-author

Impact factor magazine:

4.7 Citations: 1

Activities: PLA-PEG polymeric micellar nanoassemblies were designed, characterized and tested *in vitro* and targeted with the RGD pattern. Doxorubicin has been encapsulated within nanoparticles to act as drug delivery systems against osteosarcoma. The nanoparticles were characterized by DLS, SEM, drug release study and "Critical Micelle Concentration".

- Žárská, L., Moynihan, E., Rossi, A., Bassi, G., Balatková, P., Campodoni, E., Cameo, M.G., Montesi, M., Montagner, D., Ranc, V. and Panseri, S. (2024), Dual Drug Delivery in Cancer Therapy Using Graphene Oxide-Based Nanoplatforms. *Adv. NanoBiomed Res.* 2400026. <https://doi.org/10.1002/anbr.202400026>.

Role: Au pair co-author

Impact factor: **4**

Activities: design, development and characterization of graphene oxide-based nanocarriers as multi-drug delivery systems against osteosarcoma. The nanocarriers were functionalised with PEG and, cisplatin and doxorubicin. Nanosystems were characterised *in vitro* in 2D and 3D cell culture.

- Luca Zoli; Francesca Servadei; Giada Bassi; Arianna Rossi; Monica Montesi; Antonio Vinci; Diletta Sciti; Silvia Panzeri. From outer space to inside the body: Ultra-high temperature ceramic matrix composites for biomedical applications. *Journal of the European Ceramic Society*. 2024-02. DOI: 10.1016/j.jeurceramsoc.2023.10.007

Type: Journal article

Role: co-author on an equal footing

Citations: 4

Impact factor magazine: **5.7**

Activities: the work reports the study of the chemical/physical and biological characterization of Ultra-high temperature ceramic matrix composites (UHTCMCs) as a new class of non-brittle carbon-fiber-reinforced ceramics for future applications within the human body as prostheses, overcoming the current limitations given by the use of metals and alloys. The preliminary *in vitro* study showed the absence of cytotoxicity of these promising candidates for further study for biomedical purposes.
- Anichina K, Mavrova A, Vuchev D, Popova-Daskalova G, Bassi G, Rossi A, Montesi M, Panzeri S, Fratev F, Naydenova E. Benzimidazoles Containing Piperazine Skeleton at C-2 Position as Promising Tubulin Modulators with Anthelmintic and Antineoplastic Activity. *Pharmaceuticals (Basel)*. 2023 Oct 25;16(11):1518. doi: 10.3390/ph16111518. PMID: 38004384; PMCID: PMC10675210.

Type: Journal article

Role: Peer co-author

Impact factor magazine:

4.6 Citations: 2

Activities: the potential of benzimidazole compounds with a piperazine fragment at C-2 as tubulin-targeting agents were explored. In particular, their anthelmintic activity against isolated *Trichinella spiralis* muscle larvae and their effects on glioblastoma (U-87 MG) and breast cancer (MDA-MB-231) cell lines has been assessed. The binding mode of the most promising compound 7c, was determined using the induced fit docking-molecular dynamics (IFD-MD) approach.
- Campodoni E, Montanari M, Artusi C, Bergamini L, Bassi G, Destro E, Fenoglio I, Panzeri S, Tampieri A, Sanson A, Sandri M. Biomineralization: A new tool for developing eco-sustainable Ti-doped hydroxyapatite-based hybrid UV filters. *Biomater Adv*. 2023 Aug;151:213474. doi: 10.1016/j.bioadv.2023.213474. Epub 2023 May 15. PMID: 37207586.

Type: Journal article

Role: Peer co-author

Impact factor journal: **7.9**

Citations: 3
- Elia Marin; Giada Bassi; Orion Yoshikawa; Francesco Boschetto; Wenliang Zhu; Arianna Rossi; Alex Lanzutti; Huaizhong Xu; Monica Montesi; Silvia Panzeri. The role of Y2O3 in the bioactivity of YSZ/PLLA composites. *Journal of Materials Science*. 2023-07. DOI: 10.1007/s10853-023-08608-y

Type: Journal article

Role: co-author peer

Impact factor journal: **4.5**

Activity: the work reports the study of the role of yttria on the bioactivity of different formulations of yttria-stabilized zirconia on PLA fibers, as a bioactive ceramic composite for dental implantology that is able to stimulate cell proliferation and not affect cell adhesion *in vitro*. The different scaffolds tested *in vitro* showed increased cell proliferation of human osteoblasts in the presence of the higher yttria contents.
- Eoin Moynihan; Silvia Panzeri; Giada Bassi; Arianna Rossi; Elisabetta Campodoni; Eithne Dempsey; Monica Montesi; Trinidad Velasco-Torrijos; Diego Montagner. Development of Novel Pt(IV)-Carbohydrate Derivatives as Targeted Anticancer Agents against Osteosarcoma. *International Journal of Molecular Sciences*. 2023-03-23. DOI: 10.3390/ijms24076028

Type: Journal article

Role: co-author on an equal footing Citations: 4

Magazine Impact Factor: **5.6**

Activity: the work reports the synthesis of 4 innovative carbohydrate-modified cisplatin-based

complexes and the subsequent chemical/physical and biological characterization in terms of antitumor activity against osteosarcoma in 2D and 3D scaffold-based cell culture *in vitro*. The sugar bound to the cisplatin platform increases the specificity towards diseased cells, compared to healthy cells. 3D cell culture of osteosarcoma demonstrates a greater predictivity of the tumor microenvironment than standard cell culture.

- Mancini, F.; Menichetti, A.; Degli Esposti, L.; Montesi, M.; Panseri, S.; **Bassi, G.**; Montalti, M.; Lazzarini, L.; Adamiano, A.; Iafisco, M. Fluorescent Carbon Dots from Food Industry By-Products for Cell Imaging. *J. Funct. Biomater.* 2023, 14, 90. <https://doi.org/10.3390/jfb14020090> Type: article in journal
Role: Au pair co-author
Citations: 6
Journal Impact Factor: **7.086**
Activities: The study presents the synthesis of luminescent carbon dots using carbon-rich by-products of the food industry for cell imaging applications. Careful chemical/physical and biological characterization was carried out in terms of biocompatibility and fluorescent cell internalization. The carbon dots were not cytotoxic and act as luminescent probes.
- Serena Maria Torcasio, Roberto Oliva, Monica Montesi, Silvia Panseri, **Giada Bassi**, Antonino Mazzaglia, Anna Piperno, Olivier Coulembier, Angela Scala, Three-armed RGD-decorated starPLA-PEG nanoshuttle for docetaxel delivery, *Biomaterials Advances*, Volume 140, 2022, 213043, ISSN 2772-9508, <https://doi.org/10.1016/j.bioadv.2022.213043>.
Type: article in journal
Role: co-author on an equal footing
Citations: 7
Journal Impact Factor: **8.457**
Activities: the study reports the design, synthesis and chemical/physical and biological characterization of polymeric micelles based on PLA-PEG and decorated with the RGD peptide as Docetaxel drug delivery systems. The biological activity of drug-charged and non-drug-charged micelles was analyzed in terms of cell viability inhibition, migration inhibition, and cell morphology. The presence of RGD peptide in the drug-loaded polymer complex increases the inhibitory activity of migration in breast adenocarcinoma tumor cells, compared to free docetaxel.
- Giusto, E.; Žárská, L.; Beirne, D.F.; Rossi, A.; **Bassi, G.**; Ruffini, A.; Montesi, M.; Montagner, D.; Ranc, V.; Panseri, S. Graphene Oxide Nanoplatfroms to Enhance Cisplatin-Based Drug Delivery in Anticancer Therapy. *Nanomaterials* 2022, 12, 2372. <https://doi.org/10.3390/nano12142372>
Type: article in journal
Role: co-author on an equal footing
Quotes: 22
Journal Impact Factor: **4.921**
Activities: In the study, graphene oxide nanoplatfroms functionalized with PEG and loaded with platinum were designed, developed and characterized as versatile delivery systems against cancer. Careful biological characterization demonstrated an anti-tumor effect and increased cellular internalization in osteosarcoma and glioblastoma, compared to free platinum. A significant inhibition of migration has been detected in breast adenocarcinoma.
- M.A. Grimaudo, G.S. Krishnakumar, E. Giusto, F. Furlani, **G. Bassi**, A. Rossi, F. Molinari, F. Lista, M. Montesi, S. Panseri, Bioactive injectable hydrogels for on demand molecule/cell delivery and for tissue regeneration in the central nervous system, *Acta Biomaterialia*, Volume 140, 2022, Pages 88-101, ISSN 1742-7061, <https://doi.org/10.1016/j.actbio.2021.11.038>.
Type: review
Role: Au pair co-author
Citations: 48
Journal Impact Factor: **10.633**
Activity: a summary of the latest innovations in bioactive injectable hydrogels has been reported, focusing on the design of hydrogels responsive to internal/external stimuli, capable of guiding the response of neuronal tissue. The aim was to underline the advantages and limitations of thermo-responsive, photo-responsive, magnetic, electrical, ultrasonic and enzymatic stimulus responsive

injectable hydrogels in the development of customizable neurotherapies. The journal helps to identify strengths and weaknesses in the current literature and to support the use of injectable hydrogels in stimulating central nervous system regeneration.

- Montanari, M.; Sangiorgi, A.; Campodoni, E.; **Bassi, G.**; Gardini, D.; Montesi, M.; Panseri, S.; Sanson, A.; Tampieri, A.; Sandri, M. Additive-Free Gelatine-Based Devices for Chondral Tissue Regeneration: Shaping Process Comparison among Mould Casting and Three-Dimensional Printing. *Polymers* 2022, 14, 1036. <https://doi.org/10.3390/polym14051036>

Type: article in journal

Role: **co-author on an equal footing** Citations: 4

Journal Impact Factor: **5.542**

Activity: The study reports the use of gelatin as a stand-alone, unmodified material for the production of scaffolds for tissue engineering, compared to usually gelatin chemically modified or mixed with other polymers. A comparison between mould-casted scaffolds and 3D printed gelatine was also made. All the scaffolds obtained were characterized morphologically, physically/chemically, mechanically and biologically to compare their performance. Mould-cast and printed scaffolds have opposite properties in terms of interconnection, porosity, compressive strength and cell colonization, where the 3D printed scaffold is better.
- Furlani, F.; Rossi, A.; Grimaudo, M.A.; **Bassi, G.**; Giusto, E.; Molinari, F.; Lista, F.; Montesi, M.; Panseri, S. Controlled Liposome Delivery from Chitosan-Based Thermosensitive Hydrogel for Regenerative Medicine. *Int. J. Mol. Sci.* 2022, 23, 894. <https://doi.org/10.3390/ijms23020894>

Type: article in journal

Role: **co-author on an equal footing** Quotes: 29

Activity: The work describes the development of an injectable nanocomposite system based on thermosensitive chitosan hydrogel and included liposomes for regenerative medicine applications. A careful chemical/physical, mechanical and biological characterization was carried out on the developed system to define its potential ability to control the release of the content from liposomes to be internalized by cells. Chitosan coating and the presence of the complete system have been shown to increase cellular internalization. Chemical/physical analyses show that the system can be easily injected into the target site and form a hydrogel at physiological temperature.

Journal Impact Factor: **5.542**
- Moynihn E, **Bassi G**, Ruffini A, Panseri S, Montesi M, Velasco-Torrijos T and Montagner D (2021) Click Pt(IV)-Carbohydrates Pro-Drugs for Treatment of Osteosarcoma. *Front. Chem.* 9:795997. doi: 10.3389/fchem.2021.795997

Type: article in journal

Role: **co-author on an equal footing** Impact factor journal: **5.545**

Citations: 8

Activities: the work reports the synthesis of 4 innovative carbohydrate-modified cisplatin-based complexes and the subsequent chemical/physical and biological characterization in terms of antitumor activity against osteosarcoma and CSCs. The sugar bound to the cisplatin platform increases specificity to diseased cells.
- Campodoni, E.; Montanari, M.; Artusi, C.; **Bassi, G.**; Furlani, F.; Montesi, M.; Panseri, S.; Sandri, M.; Tampieri, A. Calcium-Based Biomineralization: A Smart Approach for the Design of Novel Multifunctional Hybrid Materials. *J. Compos. Sci.* 2021, 5(10), 278. DOI: 10.3390/jcs5100278

Type: review

Role: **Peer co-author**

Impact factor magazine: **2,591** Citations: 12

Activity: A summary of all potential applications of the biomineralisation process as a cascade of phenomena generating hybrid nanostructured materials based on organic and inorganic components was reported. In particular, calcium biomineralization has been explored in terms of applications of Regenerative Medicine, Tissue Engineering, Drug Delivery Systems, Nanomedicine and UV filters.

- Mulazzi, M.; Campodoni, E.; **Bassi, G.**; Montesi, M.; Panseri, S.; Bonvicini, F.; Gentilomi, GA.; Tampieri, A.; Sandri, M. Medicated Hydroxyapatite/Collagen Hybrid Scaffolds for Bone Regeneration and Local Antimicrobial Therapy to Prevent Bone Infections. *Pharmaceutics*. 2021 Jul 16;13(7):1090. DOI: 10.3390/pharmaceutics13071090; PMID: 34371782; PMCID: PMC8309148
 Type: article in journal
Role: peer co-author
 Impact factor journal:
6,525 Citations: 22
Activity: In this study, an osteoinductive and bioresorbable bone graft was designed and characterized that had the ability to control the release of antibiotics in situ to eradicate or prevent infections and simultaneously repair bone defects. A mineralised collagen biomaterial was loaded with two different antibiotics and extensive biological characterisation in terms of antibacterial activity and biocompatibility was carried out.
- Bassi, G.**; Grimaudo, MA.; Panseri, S.; Montesi, M. Advanced Multi-Dimensional Cellular Models as Emerging Reality to Reproduce In Vitro the Human Body Complexity. *Int J Mol Sci.*, 2021. DOI: 10.3390/ijms22031195; PMID: 33530487
 Type: review
Role: first author and corresponding author
 Journal Impact Factor: **5.542**
 Citations: 37
Activities: the state of the art has been reported regarding the most advanced advances in recent years in the development of innovative technologies to bioengineer healthy and diseased tissues in vitro, in order to create predictive platforms that overcome the current limits imposed by standard cell culture systems. Particular attention was paid to emerging technologies for the development of relevant 3D models in diseased tissues.
- Bassi, G.**; Panseri, S.; Dozio, S.M.; Sandri, M.; Campodoni, E.; Dapporto, M.; Sprio, S.; Tampieri, A.; Montesi, M. Scaffold-based 3D cellular models mimicking the heterogeneity of osteosarcoma stem cell niche. *Scientific reports* 2020, 10, 22294. DOI: 10.1038/s41598-020-79448-y; PMID: 33339857
 Type: article in journal
Role: first author and corresponding author
 Journal Impact Factor: **4.996**
 Citations: 52
Activities: Two in vitro 3D models of osteosarcoma focused on the tumor stem cell (CSCs) niche have been designed, developed and characterized as predictive models of the tumor microenvironment in vivo. Two hydroxyapatite-based biomaterials, one fully ceramic and one hybrid mineralized collagen composite, were characterized in terms of chemical/physical, mechanical and biological properties, and used as scaffolds to mimic the extracellular matrix of bone tissue. The CSCs were enriched in sarsospheres and combined with scaffolds to obtain a 3D model of tumor cell culture. The complete 3D system was analyzed in terms of cell-biomaterial interaction and molecular response of CSCs in the presence of scaffolds.

TECHNICAL SKILLS

High experience in in vitro morphological and biological analysis of ceramic-based and hybrid nanosystems as drug delivery systems, as surface coatings and as hydrogels.

High experience in the development of 3D cell cultures and co-cultures *in vitro* in static and dynamic conditions (Bioreactor) through the use of ceramic scaffolds, composite biohybrids, collagen, gelatin.

High experience in the development of tumor spheroids enriched with Tumor Stem Cells and analysis of spheroidal properties.

High experience in the biocompatibility analysis of nanosystems (nanoparticles, dots, nanotubes), functionalized surfaces, materials for Regenerative Medicine, Tissue Engineering, Drug Delivery, building and aerospace applications, etc.

Experience in the isolation and characterization of extracellular vesicles from different cell types. Application of vesicles on 2D or 3D culture systems.

Experience of the *in vivo* implantation of scaffold-based 3D models in CAM models.

Experience in cell transfection with plasmids

High experience in statistical data analysis, writing reports and Journal clubs.

Expertise in the following cell and molecular biology techniques, and chemical characterization of materials:

- Qualitative and quantitative cellular viability and cytotoxicity assays (MTT, Presto Blue, Live and Dead)
- Apoptosis and cell necrosis assays (Annexin V and Propidium Iodide), qualitative analysis of apoptotic DNA (Apoptosis DNA Ladder kit)
- Assays for tumor spheroid analysis: Sphere-Forming Efficiency assay (SFE) and Limited Dilution Assay (LDA)
- Scratch test (Transwell insert based method)
- Western Blotting, qRT-PCR, Agarose gel DNA/RNA electrophoresis, ELISA
- Immunofluorescence, immunohistochemistry, fluorescent analysis and histology (paraffin, epoxy resin, methacrylate resin, OCT) of 2D and 3D cultured samples.
- Scanning Electron Microscopy (SEM) Analysis
- Biological sample preparation for ICP-OES
- Magnetophore plates
- Dynamic Mechanical Analysis (DMA)

LANGUAGE SKILLS

Mother tongue: Italian

Other languages: English (professional - B2) – Spanish (B2) – French (B2).

SKILLS

Microsoft Office: Word, Excel, Power Point, Outlook. / EndNote X7 / Adobe Photoshop / Graphpad prism (Version: 8.00 and 6.00) / Gimp Photoshop (photo editing) / PubMed / Image Lab Software / Image J software / Dino.Capture 2.0. software / Google (Google Drive, Google Docs, Google Slides).

Il presente Curriculum è reso sotto forma di dichiarazione sostitutiva di certificazione e di dichiarazione sostitutiva dell'atto di notorietà ai sensi degli artt. 46 e 47 del d.P.R. 445/2000. Il sottoscritto GIADA BASSI nata a RAVENNA (RA) IL 14/07/1995 attualmente residente a RUSSI (RA) 48026 IN VIA PROVINCIALE MOLINACCIO N. 57, telefono +39 3333872002, visto il D.P.R. 28 dicembre 2000, n. 445 concernente "T.U. delle disposizioni legislative e regolamentari in materia di documentazione amministrativa" e successive modifiche ed integrazioni, vista la Legge 12 novembre 2011, n. 183 ed in particolare l'art. 15 concernente le nuove disposizioni in materia di certificati e dichiarazioni sostitutive (*), dichiara di essere consapevole della responsabilità penale prevista, dall'art. 76 del DPR 445/2000 per le ipotesi di falsità in atti e dichiarazioni mendaci ivi indicate.

Il sottoscritto autorizza il trattamento dei dati personali in esso contenuti e per le finalità connesse all'uso dello stesso ai sensi del d.lgs. n. 196/03 e successive modifiche e integrazioni.

(*) ai sensi dell'art. 15, comma 1 della Legge 12/11/2011, n. 183 le certificazioni rilasciate dalla P.A. in ordine a stati, qualità personali e fatti sono valide e utilizzabili solo nei rapporti tra privati; nei rapporti con gli Organi della Pubblica Amministrazione e i gestori di pubblici servizi, i certificati sono sempre sostituiti dalle dichiarazioni sostitutive di certificazione o dall'atto di notorietà di cui agli artt. 46 e 47 del DPR 445/2000.

Russi, 13/05/2025

Il dichiarante



