

Prof. Valentina Rapozzi

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Education and Carrier

1988: Degree in Biology at University of Trieste, Italy

1988-1991: Schering S.p.A. fellowship at the Institute of Pharmacology, University of Trieste.

1992-2002: Graduate Technician at the University of Udine, Italy

2002- 2018: University Researcher at Department of Medicine, University of Udine

Current position: Associate Professor in BIO/10 at the University of Udine

Research activity

The research interests can be divided in three fields: 1) Application of new photosensitizers in antitumor strategy. Study of molecular pathways involved in host's response to the photodynamic therapy; 2) Molecular strategies (anti-gene and antisense) to arrest and study neoplastic proliferation; 3) Influence of psychological stress on metastasis progression in animal model.

Current research is focused on the study of redox signaling and molecular pathways involved in the tumor response to oxidative stress. In particular the role of reactive oxygen and nitric species (ROS/RNS) in coordinating tumor cellular responses to photooxidative stress and chemotherapy in *in vitro* and *in vivo* experimental models.

Scientific output (Scopus):

84 Publications with 9 book chapters

H Index= 25

Honors

06/2021 National Scientific Qualification (ASN) for Full Professor in Biochemistry

Horizon Europe Grant

March 2023 Topic: HORIZON-MSCA-2022-DN-01-01: Project 101119873. Proposal Title: Advanced Engineering of Nitric Oxide Based Therapeutics for Triple Negative Breast Cancer Training Network. Acronymus:NO-CANCER-NET

Principal Investigator for University of Udine

Participant to National Grant

AIRC 2017 IG2017, ProjectCode19898 "Epigenetic modifications in gene regulation: effect of 8-oxoguanine on KRAS transcription in pancreatic cancer cells" PI: Prof. Luigi Xodo

AIRC 2015 "Albumin-based multimodal cancer therapy: a light triggered implemented approach" di cui è PI:Dr. Greta Varchi, CNR, ISOF, Bologna, as scientific responsible of animal Project "Approccio teranostico per il trattamento di tumori solidi".

AIRC 2013 "Targeted cancer Therapy: rationale Design of Anti-KRAS drugs to treat pancreatic cancer" PI: Prof. Luigi E. Xodo

AIRC 2010 "Molecular targeting of oncogenes: rationale design of anticancer drugs directed against KRAS" PI: Prof. Luigi E. Xodo, University of Udine, Italy.

PRIN 2007 "Sintesi, caratterizzazione e attività biologica di pentafrine libere e coniugate al glicole polietilenico. PI: Dr. Clara Comuzzi, University of Udine, Italy

INSTM- PRISMA 2007-9 "Innovative Singlet Oxygen Sensitizers for Biologically Modulated Photodynamic Therapy". PI: Prof Luca Beverina, University of Milano, Bicocca, Italy
PRIN 2005 "Strategie di silenziamento di specifici geni legati allo stress ossidativo in epatociti". PI: Prof Franco Quadrifoglio, University of Udine, Italy
PRIN 2003 "Utilizzo di PNA coniugato al polietilenglicole e a peptidi basici per inibire la progressione neoplastica di cellule di carcinoma pancreatico". PI: Prof. Luigi Emilio Xodo, University of Udine, Italy.
PRIN 2001 "Sviluppo di strategie anti-gene per il controllo della trascrizione degli oncogeni Bcr-Abl e KiRas" PI: Prof. Luigi Emilio Xodo, University of Udine, Italy
1992-1997 CNR project "Applicazioni cliniche della ricerca oncologica" Sotto- progetto 'Terapie selettive: basi biologiche per trattamenti mirati' . PI: Prof. Tullio Girdali, University of Udine, Italy.
1988-1991 Participant to the Unità Operativa del Progetto Finalizzato C.N.R. "Oncologia" sottoprogetto Farmacologia; 'Approcci farmacologici al trattamento dell'invasione, disseminazione e metastatizzazione'. PI: Prof. Tullio Girdali, University of Trieste, Italy.

Membership:

Since 2022 Founder and Member of International Society for Nitric Oxide and Cancer
Since 2018 President of the Società Italiana di Fotobiologia
Since 2012 Member of the Executive Committee of Società Italiana di Fotobiologia (SIFB)
Since 2012 Member of the European Society of Photobiology
Since 2011 Member of the International Photodynamic Association

Conference organizer and invited speaker

She is organizing Third International Conference "therapeutic Applications of Nitric Oxide in Cancer and Inflammatory-Related Disorders" Udine, Italy September 4-5, 2023
Invited Speaker with the presentation "RKIP and YY1 expression is modulated in tumour cells after repeated treatment with anticancer drugs inducing oxidative stress: implications for the development of tumour resistance." at International Symposium in RKIP/YY1, Catania 8-11 March 2023
Chair at the Second International Conference "Therapeutic Applications of Nitric Oxide in Cancer and Inflammatory- related Diseases" Seville, Spain, March 3-5, 2022.
Chair and Invited Speaker with the presentation "Role of photooxidative damage in the acquired resistance of cancer cells" at 19th Congress of the European Society for Photobiology. 30 August – 3 September 2021 Salzburg, Austria
Chair at XXXII Annual Conference of Italian Society of Photobiology. Virtual Conference 23-24 June 2021
Chair and Invited Speaker to VII International Workshop on Nitric Oxide and Cancer: Special Focus on the Tumour Microenvironment with the presentation "Role of nitric oxide in the photooxidative response of cancer cells" Galway (Virtual), May 27-28, 2021.
Invited Speaker to the 2nd International Symposium on Prognostic and Therapeutic Implications of RKIP in cancer with the presentation "Role of RKIP in tumor response to photo-oxidative damage" Heraklion, Crete, Greece May 9th-10th, 2019.
Chair at the International Meeting "Therapeutic Applications of Nitric oxide in cancer and Inflammation-related Disorders" Siena, Italia. October 4th-5th, 2018.
Invited Speaker to Photodynamic Therapy and Photodiagnosis Update . Kochel am See, Germany, September 18th-22nd , 2018.
Organizer of the SIFB-ALPE ADRIA Meeting on Photobiology- Udine, Italia. June 20th-22th, 2018.
Invited Speaker to the European Society of Photobiology with "The crucial role of iNOS/NO in acquired resistance to cancer photodynamic therapy" Pisa, Italy 4th- 8th September , 2017.

Invited Speaker to the DDTWC with "Innovative Drugs in Photodynamic Therapy", Boston, USA July 10th-14th, 2017.

Organizer of the V International Workshop on Nitric Oxide and Cancer. Bologna, Italy, March 22th-24th, 2017.

Invited Speaker to the 16th Congress of the European Society for Photobiology with "The critical role of nitric oxide in photodynamic therapy:DRPDT2 as a new photosensitizer-NO conjugate. Aveiro, Portugal. August 31st- September 4th, 2015.

Speaker to the Annual Conference of Italian Society of Photobiology with "Molecular pathways in the response of tumors to photodynamic therapy:Role of NF-kB/YY1/RKIP loop" Bari, Italy, June 11th-13th, 2015.

Invited speaker to the International Workshop on Nitric Oxide with "The role of nitric oxide after repeated low dose photodynamic treatments in prostate carcinoma cells" Sevilla, Spain March, 13rd -14th, 2015.

Co-organizer of the Annual National Conference of Italian Society of Photobiology, Trento, Italy June 11th-12th, 2014.

Invited speaker to the 37th Meeting of American Society for Photobiology with "Role of NO induced by repeated treatments with Pba/PDT in prostate cancer cells" San Diego, California, June 14th-19th 2014.

Speaker to the 15th Congress of the European Society for Photobiology with "Repeated low-dose Pba/PDT treatments stimulate cell growth of prostate cancer cells". Liege, Belgium, September 2nd-6th, 2013.

Speaker to the Italian Meeting on Porphyrins and Phtalocyanines-1 (IMPP-1) with "Using cellular mechanisms to improve the efficacy of photodynamic therapy in prostate cancer cells". Roma, Italy, July 1st-3rd, 2013.

Invited speaker to the Third International Workshop on Nitric Oxide and Cancer with "Role of Nitric oxide to improve the photodynamic therapy in prostate cancer cells" Kingston, Ontario, Canada May, 30th - June 1st 2013.

Chair of the Annual National Conference of Italian Society of Photobiology, Pisa, Italy June 13th-14th, 2013.

Speaker to the 9th International Symposium on Photodynamic Therapy and Photodiagnosis in Clinical Practice with "Role of NF-kB/Snail/RKIP loop in the response of tumor cells to photodynamic therapy". Brixen, Italy, October 16th-20th, 2012.

Speaker to the Annual Conference of Italian Society of Photobiology with "Ruolo dell'ossido nitrico nella terapia fotodinamica in topi portatori del melanoma amelanotico B78-H1". Padova, Italy, June 14th-16th, 2012.

Chair and speaker to the International Workshop on Molecular Pathways in the Response of Tumours to Photodynamic Therapy with "Role of the NF-kB/Snail/RKIP loop in photodynamic therapy", Udine, Italy, September 9th-10th, 2011.

Organizer of the International Workshop "Molecular Pathway in the Response of Tumours to Photodynamic Therapy" Udine, Italy, September 9th-10th, 2011.

Activity of Reviewer:

Photochemistry & Photobiology; Redox Biology; Chem Med Chem; J Cell Biology; Biochemical Pharmacology; Critical ReviewsTM in Oncogenesis; Scientific Reports; Cancers, Nitric Oxide Journal;

Referee for PhD

Referee for the Dissertation "Synthesis and evaluation of the biological activity of porphyrin-peptide conjugates with specific targeting against Triple Negative Breast Cancer (TNBC)" of PhD student Miryam Malacarne , University of Insubria, Varese, Italy. March 17, 2022

Referee for the Dissertation "Photodynamic therapy of prostate cancer using reduced porphyrinoids" of PhD Student Mariana Queirós Mesquita, University of Aveiro, Portugal. February 25, 2022

Referee for the Dissertation "Synergic interaction of chemotherapy and PDT by co-delivery of DTX and Photosensitizers in nanopartilces" of PhD Student Elisa Gaio, University of Padova, 2018.

Referee for the Dissertation of PhD Verbena Ziegler, University of Salzburg, Austria

"Gaining advantage from photosensitizer characteristics- New applications for photosensitizers off the beaten tracks" 2017

Referee and Examiner of PhD Dissertation of Catherina Olsen, University of Oslo, Norway

"Mechansisms of Resistance of TPCS2a-Photodynamic therapy: implication for Photochemical internalization",2017

Referee for scientific carrier of Dr.Niharika Nath ,College of Arts and Sciences, New York Insitute of Technology, New York , USA, 2017

Editor:

Member of Editorial Board for the Journal "Critical Reviews™ in Oncogenesis" from 2020

Guest Editor of Circadian Rhythms and Oncogenesis in Critical Reviews in Oncogenesis, Begell, 2021, vol 26, Issue 3-4.

Guest Editor of Issue "Nitric Oxide and Cancer" in Critical Reviews in Oncogenesis, Begell, 2017

Editor of "Resistance to Photodynamic Therapy in Cancer", vol 5 Series Resistance to Targeted Anti-Cancer Therapeutics (Series Editor Benjamin Bonavida), 2014

Guest-Editor volume 2, issue 3, 2011 "Molecular Pathways in the Response of Tumors to Photodynamic Therapy" in Forum on Immunopathological Diseases and Therapeutics, Benjamin Bonavida and M. Zouhair Atassi Eds.

Visiting scientist

June-August 2010 UCLA, University of Los Angeles, California

Research publications on : <https://orcid.org/0000-0001-7619-5252>