Dr. Valentina Rapozzi

Brief Academic Biography

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, Italy
1992-2002: Graduate Technician at the University of Udine, Italy
2002- 2018: University Researcher at Department of Medicine, University of Udine, Italy

Current position: Associate Professor in Biochemistry at the Department of Medicine, University of Udine, P.le Kolbe 4, 33100 Udine, Italy
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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 in *in vitro* and *in vivo* experimental models.

Scientific output

74 Publications - 9 book chapters

Teaching at the University of Udine

2003-2011 Biochemistry for degree course in Obstetrics, University of Udine
Since 2004 Propedeutic biochemistry for degree course in Medicine, University of Udine
Since 2013 Biochemistry for degree course in Sport Science, University of Udine.
Since 2018 Propedeutic biochemistry for degree course in Motor Sciences.
Since 2020 Biochemistry for degree course in Biotechnology

Teaching assignments outside the University of Udine

Invited teaching with the lesson "Applications of Photochemistry in the Medical Field"at the 6th National Course of Photochemistry at the University of Bologna, June 3rd-6th, 2013.
Invited teaching at the Summer school of Photobiology and Photodermatology at the University of Brescia with two lessons: "Subcellular localization of photosensitizers and mechanisms of cell death in photodynamic therapy". "Influence of tumor microenvironment in photodynamic therapy: using

cellular mechanisms to develop effective combinations of PDT and targeted therapies". July 7th-11th, 2014.
Invited teaching at European Society of Photobiology School with the lesson "Cell Signaling after Photodynamic Therapy with a focus on cell death mechanisms". Brixen June 11th-16th, 2018.

Conference organizer and speaker

- Chair and speaker to the International Workshop on Molecular Pathwways 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 Workshop Internazionale "Molecular Pathway in the Response of Tumours to Photodynamic Therapy" Udine, Italy, September 9th-10th, 2011.
- 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.
- 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.
- Chair of the Annual National Conference of Italian Society of Photobiology, Pisa, Italy June 13th-14th, 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.
- Speaker to the 15th Congress of the European Society for Photobiology with " Repeated low-dose Pb*a*/PDT treatments stimulate cell growth of prostate cancer cells". Liege, Belgium, September 2nd-6th, 2013.
- Co-organizer of the Annual National Conference of Italian Society of Photobiology, Trento, Italy June 11th-12th, 2014.
- 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.
- 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.
- 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.
- 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 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.
- Organizer of the V International Workshop on Nitric Oxide and Cancer. Bologna, Italy , March 22th-24th, 2017.

- Invited Speaker to the DDTWC with "Innovative Drugs in Photodynamic Therapy", Boston, USA July 10th-14th , 2017.
- 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.
- Organizer of the SIFB-ALPE ADRIA Meeting on Photobiology- Udine, Italia. June 20th-22th, 2018.
- Invited Speaker to Photodynamic Therapy and Photodiagnosis Update . Kochel am See, Germany, September 18th-22nd , 2018.
- 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 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, Creta, Greece May 9th-10th, 2019.

Participant to National Grant

- 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 Giraldi, University of Trieste, Italy.
- 1992-1997 CNR project "Applicazioni cliniche della ricerca oncologica" Sotto- progetto 'Terapie selettive: basi biologiche per trattamenti mirati' . PI: Prof. Tullio Giraldi, 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
- 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 2005 "Strategie di silenziamento di specifici geni legati allo stress ossidativo in epatociti". PI: Prof Franco Quadrifoglio, 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 2007 "Sintesi, caratterizzazione e attività biologica di pentafirine libere e coniugate al glicole polietilenico. PI: Dr. Clara Comuzzi, University of Udine, Italy
- AIRC 2010 "Molecular targeting of oncogenes: rationale design of anticancer drugs directed against KRAS" PI: Prof. Luigi E. Xodo, University of Udine, Italy.
- AIRC 2013 "Targeted cancer Therapy: rationale Design of Anti-KRAS drugs to treat pancreatic cancer" PI: Prof. Luigi E. Xod
- 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 2017 IG2017, ProjectCode19898 "Epigenetic modifications in gene regulation: effect of 8-oxoguanine on KRAS transcription in pancreatic cancer cells" PI: Prof. Luigi Xodo

Membership*:*

- Since 2011 Member of the International Photodynamic Association
- Since 2012 Member of the European Society of Photobiology
- Since 2012 Member of the Executive committee of Società Italiana di Fotobiologia (SIFB)
- Since 2018 President of the Società Italiana di Fotobiologia
- 2020 Founder and Member of International Society for Nitric Oxide and Cancer

Activity of Reviewer:

- Photochemistry & Photobiology; Redox Biology; Chem Med Chem; J Cell Biology; Biochemical Pharmacology; Critical ReviewsTM in Oncogenesis; Scientific Reports.
- 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 Examinator of PhD Dissertation of Catherina Olsen, University of Oslo, Norwey "Mechansisms of Resistance of TPCS2a-Photodynamic therapy: implication for Photochemical internalization"
- Referee for scientific carrier of Dr.Niharika Nath ,College of Arts and Sciences, New York Insitute of Technology, New York , USA, 2017
- 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.

Editor:

- *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.
- *Editor* of "Resistance to Photodynamic Therapy in Cancer", vol 5 Series Resistance to Targeted Anti-Cancer Therapeutics (Series Editor Benjamin Bonavida), 2014
- *Guest Editor* of Issue "Nitric Oxide and Cancer" in Critical Reviewes in Oncogenesis, Begell, 2017 *Member of Editorial Board* for the Journal “Critical ReviewsTM in Oncogenesis” from 2020