ROBERTA BENETTI

CURRENT ROLE

Associate Professor

Contact Information

University of Udine
Department of Medicine
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WORK EXPERIENCE

From 01.12.2022 **to present**
University of Udine
Associate Professor of APPLIED BIOLOGY (BIO/13)

From 12/21/2007 To 11/31/2022
University of udine
Aggregate Professor of Applied Biology, disciplinary scientific area BIO13

From 21.12.2007 to 31.12.2020
LNCIB, Trieste (director of the institute Prof. Claudio Schneider**)**
Head of the research group "Stem cells, epigenetics and cancer".

From 16.01.2005. to 20.12.2007
National Cancer Research Center (Centro Nacional de Investigaciones Oncologicas, CNIO, Madrid, Spain)
Qualification: Staff Scientist, in the Laboratory of "telomeres and telomerase" directed by Prof. Maria Blasco

From 01.1.2002 to 31.12.2004
National Laboratory Interuniversity Biotechnology Consortium (LNCIB), Trieste, Italy.
AIRC-FIRC (Italian Association for Research against Cancer) postdoctoral fellow

Education and Training

1997-2001
International School of Advanced Studies (SISSA/ISAS International School of Advanced Studies), Trieste, Italy.
PhD in Molecular Genetics and Biotechnology

1997
University of Trieste
Bachelor's degree in Biological Sciences

Personal skills and competences

Mother tongue	italian
Spanish	Level very good

English	Level very good
German	Level very good

International and national research projects

- Remodeling of the epithelial ovarian cancer epigenome by OCT4 pseudogene lncRNA – Airc IG (Rif. 17756). Ruolo: Principal Investigator PI; 2016-2020
- miRNAs regulating human tumor suppressor Rb and epigenetic signatures defining normal and cancer stem cells" - My First Airc Grant (MFAG Rif 42/08, 6352) Ruolo: Principal Investigator PI (2008-2011)
- "Impiego di cellule staminali multipotenti dell'adulto da tessuto adiposo per la rigenerazione cardiovascolare" - GR-2007-683407 - Ministero Della Salute - Giovani ricercatori Ruolo: Coordinatore di Unità (2007-2010)
- "Ruolo degli RNA non codificanti e dei loro bersagli cellulari nel cancro: rilevanza nella diagnosi e nella terapia"- Legge Regionale Friuli Venezia Giulia, D. 2007/LAVFOR/1461 Ruolo: Coordinatore di Unità (2007-2010)

Publications

1. Buemi V, Schillaci O, Santorsola M, Bonazza D, Broccia PV, Zappone A, Bottin C, Dell'Omo G, Kengne S, Cacchione S, Raffa GD, Piazza S, di Fagagna FD, **Benetti R**, Cortale M, Zanconati F, Del Sal G, Schoeftner S. (2022). TGS1 mediates 2,2,7-trimethyl guanosine capping of the human telomerase RNA to direct telomerase dependent telomere maintenance. **NATURE COMMUNICATIONS (IF. 17.69).** 2022 Apr 28;13(1):2302. doi: 10.1038/s41467-022-29907-z

2. Schoeftner S., Scarola M., **Benetti R. (2021).** Chromatin Regulation at Parental Gene Promoters by Pseudogene Sense lncRNAs. In: Methods in Molecular Biology. **METHODS IN MOLECULAR BIOLOGY (IF. 1.17)**, vol. 2324, p. 203-217, Humana Press Inc., ISBN: 978-1-0716-1502-7, ISSN: 1064-3745, doi: 10.1007/978-1-0716-1503-4_13

3. Valentina Buemi, Odessa Schillaci, Mariangela Santorsola1, Deborah Bonazza, Pamela Veneziano Broccia, Annie Zappone, Cristina Botti, Giulia Dell'Omo, Sylvie Kengne, Stefano Cacchione, Grazia Daniela Raffa, Fabrizio d'Adda di Fagagna, **Roberta Benetti**, Maurizio Cortale, Fabrizio Zanconati, Giannino Del Sal, Stefan Schoeftner **(2021)** TGS1 mediates 2,2,7-trimethyl guanosine capping of the human telomerase RNA to direct telomerase dependent telomere maintenance. **NATURE COMMUNICATIONS (IF. 17.69)**, accepted 03 September 2021

4. Scarola M., Comisso E., Rosso M., Del Sal G., Schneider C., Schoeftner S., **Benetti R. (2020).** FUS-dependent loading of SUV39H1 to OCT4 pseudogene-lncRNA programs a silencing complex with OCT4 promoter specificity. **COMMUNICATIONS BIOLOGY (IF 6.268)**, vol. 3, ISSN: 2399-3642, doi: 10.1038/s42003-020-01355-9

5. Petti, Eleonora, Buemi, Valentina, Zappone, Antonina, Schillaci, Odessa, Broccia, Pamela Veneziano, Dinami, Roberto, Matteoni, Silvia, **Benetti, Roberta**, Schoeftner, Stefan **(2019).** SFPQ and NONO suppress RNA:DNA-hybrid-related telomere instability. **NATURE COMMUNICATIONS (IF. 17.69)**,, vol. 10, ISSN: 2041-1723, doi: 10.1038/s41467-019-08863-1

6. Dinami R, Buemi V, Sestito R, Zappone A, Ciani Y, Mano M, Petti E, Sacconi A, Blandino G, Giacca M, Piazza S, **Benetti R**, Schoeftner S **(2017).** Epigenetic silencing of miR-296 and miR-512 ensures hTERT dependent apoptosis protection and telomere maintenance in basal-type breast cancer cells **ONCOTARGET (IF. 3.331)**, ISSN: 1949-2553

7. Comisso, E., Scarola, M, Rosso, M., Piazza, S., Marzinotto, S., Ciani, Y., Orsaria, M., MARIUZZI, Laura, SCHNEIDER, Claudio, Schoeftner, S., **BENETTI, Roberta (2017).** OCT4 controls mitotic stability and inactivates the RB tumor suppressor pathway to enhance ovarian cancer aggressiveness. **ONCOGENE (IF. 9.867)**, ISSN: 0950-9232, doi: 10.1038/onc.2017.20

8. Petti, Eleonora, Jordi, Fabian, Buemi, Valentina, Dinami, Roberto, **BENETTI, Roberta**, Blasco, Maria A, Schoeftner, Stefan **(2015**). Altered telomere homeostasis and resistance to skin carcinogenesis in Suv39h1 transgenic mice. **CELL CYCLE (IF. 3,80)**, ISSN: 1551-4005, doi: 10.1080/15384101.2015.1021517

9. Scarola, Michele, Comisso, Elisa, Pascolo, Rhena, Chiaradia, Riccardo, Maria Marion, Rosa, SCHNEIDER, Claudio, Blasco, Maria A., Schoeftner, Stefan, **BENETTI, Roberta (2015).** Epigenetic silencing of Oct4 by a complex containing SUV39H1 and Oct4 pseudogene lncRNA. **NATURE COMMUNICATIONS (IF. 17.69)**, vol. 6, ISSN: 2041-1723, doi: 10.1038/ncomms8631

10. Dinami, Roberto, Ercolani, Cristiana, Petti, Eleonora, Piazza, Silvano, Ciani, Yari, Sestito, Rosanna, Sacconi, Andrea, Biagioni, Francesca, le Sage, Carlos, Agami, Reuven, **BENETTI, Roberta**, Mottolese, Marcella, SCHNEIDER, Claudio, Blandino, Giovanni, Schoeftner, Stefan **(2014).** miR-155 drives telomere fragility in human breast cancer by targeting TRF1. **CANCER RESEARCH (IF. 12.701)**, vol. 74, p. 4145-56-4156, ISSN: 0008-5472, doi: 10.1158/0008-5472.CAN-13-2038

11. Dinami, R., Petti, E., Sestito, R., **BENETTI, Roberta**, Schoeftner, S. **(2014).** microRNAs control the function of telomeres in cancer. **RNA & DISEASE (IF.4.942),** p. 1-5, ISSN: 2375-2467, doi: 10.14800/rd.282

12. Schoeftner S, Scarola M, Comisso E, SCHNEIDER, Claudio, **BENETTI, Roberta (2013).** An Oct4-pRb axis, controlled by MiR-335, integrates stem cell self-renewal and cell cycle control.. **STEM CELLS (IF 6.277)**, vol. 31, p. 717-728, ISSN: 1066-5099, doi: 10.1002/stem.1315

13. SCAROLA M, SCHOEFTNER S, SCHNEIDER, Claudio, **BENETTI, Roberta (2010).** miR-335 directly targets Rb1 (pRb/p105) in a proximal connection to p53-dependent stress response. **CANCER RESEARCH (IF. 12.701)**, vol. 70 (17), p. 6925-6933, ISSN: 0008-5472, doi: 10.1158/0008-5472.CAN-10-0141

14. MUNOZ P, BLANCO R, DE CARCER G, SCHOEFTNER S, **BENETTI, Roberta**, FLORES JM, MALUMBRES M, BLASCO MA **(2009).** TRF1 controls telomere length and mitotic fidelity in epithelial homeostasis**. MOLECULAR AND CELLULAR BIOLOGY (IF. 4.272)**, vol. 29, p. 1608-1625, ISSN: 0270-7306, doi: 10.1128/MCB.01339-08

15. **BENETTI, Roberta**, GONZALO S, JACO I, MUNOZ P, GONZALEZ S, SCHOEFTNER S, MURCHISON E, ANDL T, CHEN T, KLATT P, LI E, SERRANO M, MILLAR S, HANNON G, BLASCO MA **(2008).** A mammalian microRNA cluster controls DNA methylation and telomere recombination via Rbl2-dependent regulation of DNA methyltransferases. **NATURE STRUCTURAL & MOLECULAR BIOLOGY (IF. 15.369)**, vol. 15, p. 268-279, ISSN: 1545-9985, doi: 10.1038/nsmb.1399

16. **BENETTI, Roberta**, SCHOEFTNER S, MUNOZ P, BLASCO MA (2008). Role of TRF2 in the assembly of telomeric chromatin. **CELL CYCLE (IF 3.80)**, vol. 7 (21), p. 3461-3468, ISSN: 1538-4101

17. **BENETTI, Roberta**, GONZALO S, JACO I, SCHOTTA G, KLATT P, JENUWEIN T, BLASCO MA **(2007).** Suv4-20h deficiency results in telomere elongation and derepression of telomere recombination. **THE JOURNAL OF CELL BIOLOGY (IF. 10.539)**, vol. 178, p. 925-936, ISSN: 0021-9525, doi: 10.1083/jcb.200703081

18. **BENETTI, Roberta**, GARCIA CAO M, BLASCO MA **(2007).** Telomere length regulates the epigenetic status of mammalian telomeres and subtelomeres. **NATURE GENETICS (IF 38.333)**, vol. 39 (2), p. 243-250, ISSN: 1061-4036

19. FLORES I, **BENETTI, Roberta,** BLASCO MA (**2006).** Telomerase regulation and stem cell behaviour. **CURRENT OPINION IN CELL BIOLOGY (IF 8.382)**, vol. 18 (3), p. 254-260, ISSN: 0955-0674

20. **BENETTI, Roberta**, BRANCOLINI, Claudio, COPETTI T., DELL'ORSO S., MELLONI E., MONTE M., SCHNEIDER, Claudio (2005). The Calpain System Is Involved in the Constitutive Regulation of beta-Catenin Signaling Function.. **THE JOURNAL OF BIOLOGICAL CHEMISTRY (IF: 5.157)**, vol. 280 (3), p. 22070-22080, ISSN: 0021-9258

21. MONTE M, **BENETTI, Roberta**, COLLAVIN L, MARCHIONNI L, DEL SAL G, SCHNEIDER, Claudio (2004). hGTSE-1 expression stimulates cytoplasmic localization of p53. **THE JOURNAL OF BIOLOGICAL CHEMISTRY (IF. 5.157)**, vol. 279 (12), p. 11752-11774, ISSN: 0021-9258

22. ZANNINI L, LECIS D, LISANTI S, **BENETTI, Roberta,** BUSCEMI G, SCHNEIDER, Claudio, DELIA D. **(2003).** Karyopherin-alpha2 protein interacts with Chk2 and contributes to its nuclear import. **THE JOURNAL OF BIOLOGICAL CHEMISTRY (IF. 5.157)**, vol. 278, p. 42346-42351, ISSN: 0021-9258, doi: 10.1074/jbc.M303304200

23. KANNAMORI M, SANDY P, MARZINOTTO S, **BENETTI, Roberta**, KAI C, HAYASHIZAKI Y, SCHNEIDER, Claudio, SUZUKI H. (**2003).** The PDZ protein tax-interacting protein-1 inhibits beta-catenin transcriptional activity and growth of colorectal cancer cells. **THE JOURNAL OF BIOLOGICAL CHEMISTRY (IF. 5.157),** vol. 278 (4), p. 38758-38764, ISSN: 0021-925

24. MONTE M, **BENETTI, Roberta**, BUSCEMI G, SANDY P, DEL SAL G, SCHNEIDER, Claudio **(2003**). The cell cycle-regulated protein human GTSE-1 controls DNA damage-induced apoptosis by affecting p53 function. **THE JOURNAL OF BIOLOGICAL CHEMISTRY (IF. 5.157)**, vol. 278, p. 30356-30364, ISSN: 0021-9258, doi: 10.1074/jbc.M302902200

25. **BENETTI, Roberta**, DEL SAL G, MONTE M, PARONI, Gabriela, BRANCOLINI, Claudio, SCHNEIDER, Claudio (**2001).** The death substrate Gas2 binds m-calpain and increases susceptibility to p53-dependent apoptosis. **EMBO JOURNAL (IF: 11.598)**, vol. 20, p. 2702-2714, ISSN: 0261-4189, doi: 10.1093/emboj/20.11.2702

26. Sgorbissa A., **BENETTI, Roberta**, Marzinotto S., SCHNEIDER, Claudio, BRANCOLINI, Claudio (1999). Caspase-3 and caspase-7 but not caspase-6 cleave Gas2 in vitro: implications for microfilament reorganization during apoptosis. **JOURNAL OF CELL SCIENCE (IF. 5.285),** vol. 112, p. 4475-4482, ISSN: 0021-9533

Research activity

Head of research groups in the field of Epigenetics and Tumors.

The scientific activity covers the area of molecular oncology and epigenetics and epigenomics. Over the years the laboratory studies the role of OCT4 in the etiopathogenesis of ovarian cancer marking its importance in defining survival rates, metastasis formation, chemoresistance and escape from immune surveillance. In the last period then, an important line of research concerns the control of gene expression mediated by silencing complexes supervised by the OCT4 pseudogene: the molecular mechanisms by which this lncRNA can modulate protein expression and thus the related phenomena of drug-resistance and immune-escape are being dissected.

Autorizzo il trattamento dei miei dati personali ai sensi dell'art. 13 D. Lgs. 30 giugno 2003 n°196 – "Codice in materia di protezione dei dati personali" e dell'art. 13 GDPR 679/16 – "Regolamento europeo sulla protezione dei dati personali"

Udine, 1 giugno 2023