

PERSONAL INFORMATION

Claudio Ortenzi



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Sex Male | Date of birth 19/01/1958| Nationality Italian

POSITION

Full professor of Zoology (DSS BIO/05)

WORK EXPERIENCE

- February 2008 – Present **Full professor of Zoology (DSS BIO/05)**
University of Macerata – Department of Education, Cultural Heritage and Tourism
P.le Luigi Bertelli – 62100 Macerata (Italy)
Business or sector Education/Research
- November 2016 – April 2022 **Vice Rector of the University of Macerata**
- October 2012 – October 2016 **Delegate for teaching activities** University of Macerata – Department of Education, Cultural Heritage and Tourism P.le Luigi Bertelli – 62100 Macerata (Italy)
Business or sector Institutional activity
- 2005 – 2006 **Member of the Administration Committee**
University of Macerata
62100 Macerata (Italy) Business or
sector Institutional activity
- 2003 – 2009 **Director of the Specialization School for Secondary Teachers**
University of Macerata
62100 Macerata (Italy) Business or
sector Institutional activity
- 2003 – 2016 **Chair of the degree course in Education Science for Primary School Teachers**
University of Macerata – Department of Education, Cultural Heritage and Tourism
P.le Luigi Bertelli – 62100 Macerata (Italy)

Business or sector Institutional activity

2000 – 2007 **Associate professor in Evolutionary Biology and Biology Teaching (DSS E/02C)**
University of Macerata – Faculty of Education Sciences
62100 Macerata (Italy)

Business or sector Education/Research

1992 – 1996 **Member of the Administration Committee**
University of Macerata
62100 Macerata (Italy) Business or
sector Institutional activity

1989 – 1999 **Assistant professor of Zoology (DSS BIO/05)**
University of Camerino – Department of Molecular, Cellular, and Animal Biology
62032 Camerino (Italy)

Business or sector Research

EDUCATION AND TRAINING

August 1988 **Certificate in Secondary Science Teaching (Chemistry, Mathematics, Physics, Life Sciences)**
Italian Ministry of Education

January 1988 **PhD in Animal Biology**
Italian Ministry of Education

October 1981 **Bachelor Degree in Biological Sciences**
University of Camerino – Department of Molecular, Cellular, and Animal Biology
62032 Camerino (Italy)

July 1977 **High School Degree in Sciences**
High School in Science Studies “E. Torricelli”
Rovigo street, 42 – 39100 Bolzano (Italy)

PERSONAL SKILLS

Mother tongue Italian

Other languages	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	C1	B2	B2	C1
German	B2	C1	B1	B1	B2

Communication skills I have developed good communication skills especially through my academic experience, the participation to several international conferences, and many years of teaching at university level.

Organisational / managerial skills

My organizational and managerial skills have been acquired, both at the institutional and scientific levels, through the following experiences:

Institutional level

- Member of the Administration Committees of the Universities of Camerino and Macerata
- Chair of the degree course in Education Science for Primary School Teachers, from 2003 at present.
- Director of the Specialization School for Secondary Teachers, from 2003 to 2009.
- Delegate for teaching activities of the Department of Education, Cultural Heritage and Tourism (University of Macerata), from 2012 to 2016.
- Vice rector of the university of Macerata, from 2016 to 2022.

Scientific level

- Coordinator of a research group at the University of Camerino, from 1989 to 1999.
- Coordinator of a research group at the University of Macerata, from 2001 to present.
- Component of the Research Unit on "Biodiversity, Evolution and Adaptive Strategies", coordinated by prof. Pierangelo Luporini at the University of Camerino, which was funded as a part of the National Program for Research in Antarctica (PNRA), from 2001 to 2002.
- Component of the Research Unit on "Bioactive Molecules of Free-living Ciliated Protozoa: Structure, Mechanism of Action and Potential Applications", coordinated by prof. Pierangelo Luporini at the University of Camerino, which was co-funded by the Italian Ministry of Education, Universities and Research, (2002, prot. PRIN: 2002057834_001).
- Component of the Research Unit on "Molecules and Genes of Antarctic Marine Organisms according to Evolutionary, Adaptive, and Applicative Function", coordinated by prof. Pierangelo Luporini at the University of Camerino, and funded under the National Research Program in Antarctica (PNRA), from 2002 to 2003.
- Component of the Research Unit on "Antarctic Ciliated Protozoa and Marine Invertebrates: Evolutive Biology, Adaptive Responses, and Potential Applications", coordinated by prof. Pierangelo Luporini at the University of Camerino, and funded under the National Research Program in Antarctica (PNRA), from 2004 to 2006.
- Component of the Research Unit on "Structure and Biology of Pheromones in Ciliates", coordinated by prof. Pierangelo Luporini at the University of Camerino, which was funded by the Italian Ministry of Education, Universities and Research (2006, prot. PRIN: 2006057151_001).
- Component of the Research Unit on "Genes and Molecules of Immunity of Invertebrates. Structure, Functions, Developmental Precursors and Transferability in Applied Research", coordinated by prof. Adriana Vallesi at the University of Camerino, which was funded by the Italian Ministry of Education, Universities and Research (2012, prot. PRIN: 20109XZEPR_009).

Organisational / managerial skills

- Scientific advisor by the Marche Region for the project SeT "Comunità on line per lo studio scientifico" funded by the Italian Ministry of Education, Universities and Research, from 2004 to 2007.
- Component of the scientific committee of the district of Ascoli Piceno for the project "*Insegnare Scienze Sperimentali*", founded by the Italian Ministry of Education, Universities and Research, from 2006 to 2008.
- Organizer of the congress "Oltre il SeT: comunità on line per lo studio scientifico", XV week of science, March 14th - 20th 2005, Macerata.
- Organizer of the congress "Promuovere la cultura scientifica e tecnologica: quali strategie", XVI week of science, March 13th - 19th 2006, Macerata.
- Organizer of the congress "Supervisione, Saperi, Professionalità", June 5th - 6th 2006, Macerata.
- Organizer of the XXVI Congress of the Italian Society of Protozoology, June 30th - July 1th 2006, Macerata.
- Organizer of the congress "Produzione e utilizzazione delle risorse alimentari nella società globale", May 17th - 18th 2007, Macerata.
- Co-organizer of the international congress "Ciliate molecular biology", July 10th - 16th 2015, Camerino.

Scientific Societies

Member of the "Italian Zoological Union" Member of the "International Society of Protozoologists" Member of the "Italian Society of Protistology" Member of the Italian Society of Comparative and Developmental Immunobiology"

Research Topics

Sexual phenomena, speciation, cell-cell interactions, and cell recognition processes in Protozoa
Molecular mechanisms of cellular aging in Protozoa Purification and characterization of anticancer molecules from ciliated Protozoa

ADDITIONAL INFORMATION

- Teaching experience
- Course of *Protozoology*, degree in Biological Sciences, Faculty of Natural Sciences, University of Camerino, 1994/1995.
- Course of *Zoology*, degree in Biological Sciences, Faculty of Natural Sciences, University of Camerino, 1995/1996, 1996/1997.
- Course of *Zoology*, degree in Natural Sciences, Faculty of Natural Sciences, University of Camerino, 1997/1998, 1998/1999.
- Course of *Animal Biology*, Master degree in "Tecnico dello sviluppo ecocompatibile", Faculty of Natural Sciences, University of Camerino, 1998/1999.
- Course of *Environmental education*, degree in Education Science for Primary School Teachers, University of Macerata, 2000/2001 – 2002/2003.
- Course of *Environmental education*, degree in Education Science for Primary School Teachers, Faculty of Education Sciences, University of Macerata, 2003/2004 – 2005/2006.
- Laboratory course of *Environmental education*, degree in Education Science for Primary School Teachers, Faculty of Education Sciences, University of Macerata, 2003/2004 – 2008/2009.
- Laboratory course of *Natural sciences*, degree in Education Science for Primary School Teachers, Faculty of Education Sciences, University of Macerata, 2003/2004 – 2008/2009.
- Laboratory course (advanced level) of *Natural sciences*, degree in Education Science for Primary School Teachers, Faculty of Education Sciences, University of Macerata, 2003/2004.
- Laboratory course of *Natural sciences*, degree in Philosophy, Faculty of Letters and Philosophy, University of Macerata, 2003/2004.
- Course of *General biology*, Specialization School for Secondary Teachers (University of Macerata), 2003/2004 – 2007/2008.
- Course of *Evolutive biology*, II level degree in Pedagogical and Human Sciences, Faculty of Education Sciences, University of Macerata, 2004/2005 – 2007/2008.
- Course of *Environmental education 1*, degree in Education Science for Primary School Teachers, Faculty of Education Sciences, University of Macerata, 2006/2007 – 2010/2011.
- Course of *Environmental education 2*, degree in Education Science for Primary School Teachers, Faculty of Education Sciences, University of Macerata, 2006/2007 – 2010/2011.
- Course of *Environmental education*, II level degree in Pedagogical Sciences, Faculty of Education Sciences, University of Macerata, 2006/2007 – 2008/2009.
- Course of *Evolutive biology*, II level degree in Pedagogical Sciences, Faculty of Education Sciences, University of Macerata, 2008/2009 – 2013/2014.
- Course of *Environmental education 1*, degree in Education Science for Primary School Teachers, Department of Education, Cultural Heritage and Tourism, University of Macerata, 2011/2012.

Teaching experience	<p>Course of <i>Environmental education</i> 2, degree in Education Science for Primary School Teachers, Department of Education, Cultural Heritage and Tourism, University of Macerata, 2011/2012 – 2012/2013.</p> <p>Course of <i>General biology</i>, 5-years degree in Education Science for Primary School Teachers, Department of Education, Cultural Heritage and Tourism, University of Macerata, 2013/2014 – 2015-2016.</p> <p>Course of <i>Environmental education</i>, I level degree in Education Science and 5-years degree in Education Science for Primary School Teachers, Department of Education, Cultural Heritage and Tourism, University of Macerata, 2011/2012 – present.</p>
Publications	<p>LUPORINI P, MICELI C and C ORTENZI (1983). Evidence that <i>Euplates raikovi</i> releases inducing mating factors (gamones). J. Exp. Zool., 226:1-9.</p> <p>SIMONETTA AM, INSOM E, MAGNONI ML, ORTENZI C, SIMONETTA J (1984). La fauna selvatica come elemento di conservazione dei pascoli: importanza potenziale e modello di approccio sperimentale al problema ai fini gestionali. Riv. di Agr. Subtr. e Trop., 3-4:681-704.</p> <p>VALBONESI A, ORTENZI C, LUPORINI P (1985). Electrophoretic comparison between <i>Euplates vannus</i> and <i>Euplates crassus</i> strains. Atti Soc.Tosc. Sci. Nat. Mem.(serie B), 92: 67-73.</p> <p>VALBONESI A, ORTENZI C, LUPORINI P (1986). Variabilità elettroforetica nel gruppo di specie marine <i>Euplates crassus-minuta-vannus</i> (CILIOPHORA, HYPOTRICHIDA). Nova Thalassia, 8 (Suppl. 3): 177-185.</p> <p>VALBONESI A, ORTENZI C, LUPORINI P (1987). Observation on the biology of <i>Euplates charon</i> (HYPOTRICHIDA, CILIOPHORA). Boll. Zool., 54: 111-118.</p> <p>VALBONESI A, ORTENZI C and P LUPORINI (1988). An integrated Study of the Species Problem in the <i>Euplates crassus-minuta-vannus</i> Group. J. Protozool., 35: 38-45.</p> <p>LUPORINI P, VALBONESI A, LA TERZA A, MICELI C, FELICI A, ORTENZI C (1989). Microfauna interstiziale antartica: morfologia e biologia di alcuni ciliati del Mare di Ross. In: Scienza e Cultura, Edizioni Universitarie Patavine, Padova, pp. 211-230.</p> <p>ORTENZI C, MICELI C, BRADSHAW RA, and P LUPORINI (1990). Identification and Initial Characterization of an Autocrine Pheromone Receptor in the Protozoan Ciliate <i>Euplates raikovi</i>. J. Cell Biol., 111: 607-614.</p> <p>VALBONESI A, ORTENZI C and P LUPORINI (1992). The Species Problem in a Ciliate with a High Multiple Mating Type System, <i>Euplates crassus</i>. J. Protozool., 39: 45-54.</p> <p>LUPORINI P, MICELI C, ORTENZI C, and A VALLESI (1992). Developmental Analysis of the Cell Recognition Mechanism in the Ciliate <i>Euplates raikovi</i>. Dev. Genetics, 13: 9-15.</p> <p>VALBONESI A, BALLARINI P, DI GIUSEPPE G, FELICI A, MICELI C, ORTENZI C, LUPORINI P (1992). Speciation and adaptative biology of antarctic ciliated protozoa. In: Scienza e Cultura, Edizioni Universitarie Patavine, Padova, pp. 111-120.</p>

Publications

- BROWN LR, MRONGA S, BRADSHAW RA, ORTENZI C, LUPORINI P and K. WÜTHRICH (1993). Nuclear magnetic resonance solution structure of the pheromone Er-10 from the ciliated protozoan *Euplotes raikovi*. *J. Mol. Biol.*, 231: 800-816.
- OTTIGER M, SZYPERSKI T, LUGINBÜHL P, ORTENZI C, LUPORINI P, BRADSHAW RA, WÜTHRICH K (1994). The NMR solution structure of the pheromone Er-2 from the ciliated protozoan *Euplotes raikovi*. *Protein Science*, 3: 1515-1526.
- MRONGA S, LUGINBÜHL P, BROWN LR, ORTENZI C, LUPORINI P, BRADSHAW RA, WÜTHRICH K (1994). The NMR solution structure of the pheromone Er-1 from the ciliated protozoan *Euplotes raikovi*. *Protein Science* 3: 1527-1536.
- ORTENZI C and P LUPORINI (1995). Competition among homologous polypeptide pheromones of the ciliate *Euplotes raikovi* for binding to each other's cell receptors. *J. Euk. Microbiol.*, 42:242-248.
- WEISS MS, ANDERSON DH, RAFFIONI S, BRADSHAW RA, ORTENZI C, LUPORINI P, and D EISENBERG (1995). A cooperative model for receptor recognition and cell adhesion: structure of the pheromone Er-1 from the ciliated protozoan *Euplotes raikovi*. *Proc. Natl. Acad. Sci. USA*, 92:10172-10176.
- LUPORINI P, MICELI C, ORTENZI C and A VALLESI (1996). Ciliate Pheromones. In: *Signaling Mechanisms in Protozoa and Invertebrates*. Csaba G and Müller WEG eds., Springer-Verlag, Berlin Heidelberg, pp. 80-104.
- LUGINBÜHL P, WEI J, ZERBE O, ORTENZI C, LUPORINI P, and K WÜTHRICH (1996). The NMR solution structure of the pheromone Er-11 from the ciliated protozoan *Euplotes raikovi*. *Protein Science*, 5: 1512-1522.
- FELICI A, ALIMENTI C, ORTENZI C, LUPORINI P (1999). Purification and initial characterization of two pheromones from the marine Antarctic ciliate, *Euplotes nobilii*. *Ital. J. Zool.*, 66: 355-360.
- ORTENZI C, ALIMENTI C, VALLESI A, DI PRETORIO, LA TERZA A, LUPORINI P (2000). The autocrine mitogenic loop of the ciliate *Euplotes raikovi*: the pheromone membrane-bound forms are the cell binding sites and potential signaling receptors of soluble pheromones. *Mol. Biol. of the Cell*, 11:1445-1455.
- LIU A, LUGINBÜHL P, ZERBE O, ORTENZI C, LUPORINI P AND K WÜTHRICH (2001). NMR structure of the pheromone Er-22 from *Euplotes raikovi*. *J. Biomolec. NMR*, 19: 75-78.
- ZAHN R, DAMBERGER F, ORTENZI C, LUPORINI P AND K WÜTHRICH (2001). NMR structure of the *Euplotes raikovi* pheromone Er-23 and identification of its five disulfide bonds. *J. Mol. Biol.*, 313: 923-931.
- ALIMENTI C, ORTENZI C, CARRATORE V, LUPORINI P (2002). Structural characterization of a protein pheromone from a cold-adapted (Antarctic) single-cell eukaryote, the ciliate *Euplotes nobilii*. *FEBS Letters*, 514: 329-332.
- ALIMENTI C, ORTENZI C, CARRATORE V, LUPORINI P (2003). Structural characterization of En-1, a cold-adapted protein pheromone isolated from the Antarctic ciliate *Euplotes nobilii*. *BBA*, 1621: 17-21.
- ALIMENTI C, ORTENZI C, CARRATORE V, LUPORINI P (2003). Cold-adapted *Euplotes* pheromones. *Europ. J. Protistol.*, 39: 399-403.
- LUPORINI P, ALIMENTI C., ORTENZI C., AND VALLESI A. (2005). Ciliate mating types and their specific protein pheromones. *Acta Protozool.*, 44: 89-101.
- ALIMENTI C., ORTENZI C., LA TERZA A., CARRATORE V. and P. LUPORINI (2005). Sea water-born protein pheromones from the Antarctic ciliate, *Euplotes nobilii*. *PolarNet Technical Report*, pp. 39-43.
- LUPORINI P., VALLESI A., ALIMENTI C., ORTENZI C. (2006). The cell type-specific signal proteins (Pheromones) of protozoan ciliates. *Current Pharmaceutical Design*, 12 (24): 3015-3024.

Publications

- ALIMENTI C., ORTENZI C., VALLESI A., LUPORINI P. (2006). *Euplotes* pheromones. Endocytobiosis Cell Res., 17: 137-145.
- BUONANNO F., CALVIGIONI G., CAMPAGNOLI A., FIORILLO A., NICOLINI P., ORTENZI C. (2007). Il "Progetto grotte" tra insegnamenti disciplinari, laboratori, tirocinio indiretto e rapporti con il territorio: un'esperienza nel Corso di laurea in Scienze della formazione primaria. In: Annali della Facoltà di Scienze della formazione. EUM, Macerata, 2: 11-34.
- BUONANNO F., QUASSINTI L., BRAMUCCI M., IIO H., ORTENZI C. (2008). Le molecole antitumorali dei protozoi ciliati. In: Annali della Facoltà di Scienze della formazione. EUM, Macerata, 3: 373-392.
- BUONANNO F., QUASSINTI L., BRAMUCCI M., AMANTINI C., LUCCARINI R., SANTONI G., IIO H., ORTENZI C. (2008). The protozoan toxin climacostol inhibits growth and induces apoptosis of human tumor cell lines. Chemico-Biological Interactions, 176: 151-164.
- ORTENZI C., BUONANNO F. (2008). Protisti in classe: organismi-cellula per l'insegnamento della biologia. SCUOLA E DIDATTICA, 4: 36-40.
- ORTENZI C., BUONANNO F. (2009). Protisti in classe. In: AUTORI VARI. Annali della Facoltà di Scienze della formazione. Anno 2007. Vol. 4: 251-271, MACERATA: EUM edizioni università di Macerata.
- BUONANNO F., ORTENZI C. (2010). The protozoan toxin climacostol and its derivatives: cytotoxicity studies on 10 species of free-living ciliates. BIOLOGIA, 65: 675-680.
- FIORINI D., GIULI S., MARCANTONI E., QUASSINTI L., BRAMUCCI M., AMANTINI C., SANTONI G., BUONANNO F., ORTENZI C. (2010). A Straightforward Diastereoselective Synthesis and Evaluation of Climacostol, A Natural Product with Anticancer Activities. SYNTHESIS, 9: 1550-1556.
- BUONANNO F., GUILLA G., STRIM C., ORTENZI C. (2012). Chemical defence by mono-prenyl hydroquinone in a freshwater ciliate, *Spirostomum ambiguum*. HYDROBIOLOGIA, 684: 97-107.
- C. ALIMENTI, A. VALLESI, P. LUPORINI, F. BUONANNO, C. ORTENZI (2012). Cell aging-induced methionine oxidation causes an autocrine to paracrine shift of the pheromone activity in the protozoan ciliate, *Euplotes raikovi*. EXPERIMENTAL CELL RESEARCH, 318: 144-151.
- PETRELLI D., BUONANNO F., VITALI L. A., ORTENZI C. (2012). Antimicrobial activity of the protozoan toxin climacostol and its derivatives. BIOLOGIA, 67: 525-529.
- BUONANNO F., HARUMOTO T., ORTENZI C. (2013). The Defensive Function of Trichocysts in *Paramecium tetraurelia* Against Metazoan Predators Compared with the Chemical Defense of Two Species of Toxin-containing Ciliates. ZOOL. SCIENCE 30 (4): 255-61.
- DOBRI N., OUMAROU E. E. N., ALIMENTI C., ORTENZI C., LUPORINI P., VALLESI A. (2013). Methionine sulfoxide reduction in ciliates: Characterization of the ready-to-use methionine sulfoxide-R-reductase genes in *Euplotes*. GENE, 515: 110-116.
- QUASSINTI L., ORTENZI F., MARCANTONI E., RICCIUTELLI M., LUPIDI G., ORTENZI C., BUONANNO F., BRAMUCCI M. (2013). DNA binding and oxidative DNA damage induced by climacostol-copper(II) complexes: Implications for anticancer properties. Chemico-Biological Interactions, 206: 109-116.
- BUONANNO F., ANESI A., GUILLA G., KUMAR S., BHARTI D., LA TERZA A., QUASSINTI L., BRAMUCCI M., ORTENZI C. (2014). Chemical offense by means of toxicysts in the freshwater ciliate, *Coleps hirtus*. J. Eukar. Microbiol., 61 (3): 293–304.
- BUONANNO F., ORTENZI C. (2015). Cold-shock based method to induce the discharge of extrusomes in ciliated protists and its efficiency. JOURNAL OF BASIC MICROBIOLOGY, 55: 1-5.

Publications

ANESI A., BUONANNO F., DI GIUSEPPE G., ORTENZI C., GUELLA G. (2016). Metabolites from the Euryhaline Ciliate *Pseudokeronopsis erythrina*. EUROPEAN JOURNAL OF ORGANIC CHEMISTRY, 1: 1330-1336.

PERROTTA C., BUONANNO F., ZECCHINI S., GIAVAZZI A., PROIETTI SERAFINI F., CATALANI E., GUERRA L., BELARDINELLI M.C., PICCHIETTI S., FAUSTO A.M., GIORGI S., MARCANTONI E., CLEMENTI E., ORTENZI C., CERVIA D. (2016). Climacostol reduces tumour progression in a mouse model of melanoma via the p53-dependent intrinsic apoptotic programme. SCIENTIFIC REPORTS, 6: 2728127296.

CATALANI E., PROIETTI SERAFINI F., ZECCHINI S., PICCHIETTI S., FAUSTO A.M., MARCANTONI E., BUONANNO F., ORTENZI C., PERROTTA C., CERVIA D. (2016). Natural products from aquatic eukaryotic microorganisms for cancer therapy: Perspectives on anti-tumour properties of ciliate bioactive molecules. PHARMACEUTICAL RESEARCH, 113: 409-420.

ANESI A., BUONANNO F., DI GIUSEPPE G., ORTENZI C., GUELLA G. (2016). Metabolites from the Euryhaline Ciliate *Pseudokeronopsis erythrina*. EUROPEAN JOURNAL OF ORGANIC CHEMISTRY, vol. 1, p. 1330-1336.

BUONANNO F., ANESI A., DI GIUSEPPE G., GUELLA G., ORTENZI C. (2017). Chemical Defense by Erythrolactones in the Euryhaline Ciliated Protist, *Pseudokeronopsis erythrina*. ZOOLOGICAL SCIENCE 34: 42-51.

BUONANNO F., ANESI A., GUELLA G., ORTENZI C. (2017). Blepharismins used for chemical defense in two ciliate species of the genus *Blepharisma*, *B. stoltzei* and *B. undulans* (Ciliophora: Heterotrichida). THE EUROPEAN ZOOLOGICAL JOURNAL, 84 (1): 402-409.

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ZECCHINI S., PROIETTI SERAFINI F., CATALANI E., GIOVARELLI M., COAZZOLI M., DI RENZO I., DE PALMA C., PERROTTA C., CLEMENTI E., BUONANNO F., ORTENZI C., MARCANTONI E., TADDEI A.R., PICCHIETTI S., FAUSTO A.M., CERVIA D. (2019). Dysfunctional autophagy induced by the pro-apoptotic natural compound climacostol in tumour cells. CELL DEATH AND DISEASE, 10, 10: 3-19.

BUONANNO F., CATALANI E., CERVIA D., PROIETTI SERAFINI F., PICCHIETTI S., FAUSTO A.M., GIORGI S., LUPIDI G., ROSSI F.V., MARCANTONI E., PETRELLI D., ORTENZI C. (2019). Bioactivity and Structural Properties of Novel Synthetic Analogues of the Protozoan Toxin Climacostol. TOXINS, 11, 42: 1-22.

CATALANI E., BUONANNO F., LUPIDI G., BONGIORNI S., BELARDI R., ZECCHINI S., GIOVARELLI M., COAZZOLI M., DE PALMA C., PERROTTA C., CLEMENTI E., PRANTERA G., MARCANTONI E., ORTENZI C., FAUSTO A.M., PICCHIETTI S., CERVIAD. (2019). The Natural Compound Climacostol as a Prodrug Strategy Based on pH Activation for Efficient Delivery of Cytotoxic Small Agents. FRONTIERS IN CHEMISTRY, 7, 1-22.

BUONANNO F., CATALANI E., CERVIA D., CIMARELLI C., MARCANTONI E., ORTENZI C. (2020). Natural Function and Structural Modification of Climacostol, a Ciliate Secondary Metabolite. MICROORGANISMS 8 (6), 809.

CAVALEIRO J., OLIVEIRA NB., RIBEIRO TA., GUIMARÃES LF., FERNANDES NM., DA SILVA-NETO ID., MARSZAKOWSKI F., WOHNKRATH K., BARRETO CB JR., SCHWEIKERT M., PETRONI G., ORTENZI C., BUONANNO F., PICCIANI PHS., OLIVERA ON JR., SOARES CAG (2020). Distinguishing Activities in the Photodynamic Arsenals of the Pigmented Ciliates *Blepharisma sinuosum* Sawaya, 1940 and *Blepharisma japonicum* Suzuki, 1954 (Ciliophora: Heterotrichaea). PHOTOCHEMISTRY AND PHOTOBIOLOGY, doi:10.1111/php.13288.

SANTULLI C., PALLOTTINI T., GENTILI G., ORTENZI C. (2020). An Experience on Environmental Education based on Respect-Reduce-Reuse-Recycle in a Village Primary School in the Marche Region, in Italy. Journal of Education and Practice 11 (15): 25-38.

VERANI M, DI GIUSEPPE G, FEDERIGI I, BUONANNO F., ORTENZI C AND CARDUCCI A (2020). Preliminary Data Related to the Effect of Climacostol Produced by the Freshwater Ciliate *Climacostomum virens* on Human Adenovirus. *Viruses*, 12: 658.

BUONANNO, F., ORTENZI, C (2022). Funzione naturale, modificazioni strutturali e proprietà farmacologiche del climacostolo. In: Sostanze naturali e terapie integrate: spunti di riflessione dai seminari del gruppo di studio "Terapie Integrate e Sostanze Naturali". Rapporti ISTISAN 22/2; 22/2; Roma, Istituto Superiore di Sanità; pp. 41 – 46.

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Research Collaborations

From 1990 to 1995, I collaborated with the research team directed by prof. Ralph A. Bradshaw, at the University of California, Irvine.

From 1993 to 2001, I collaborated and published 6 articles in ISI journals with prof. Kurt Wüthrich (Nobel Prize in Chemistry 2002), at the ETH in Zurich.

Since 2003, I have been collaborating with the research teams directed by prof. Hideo Ito, at the University of Osaka, and by prof. Terue Harumoto, at the University of Nara (Japan).