

**CURRICULUM VITAE**

<b>PERSONAL INFORMATION</b>	
<i>Name</i>	<b>IOLE TOMASSINI BARBAROSSA</b>
<i>Nationality</i>	ITALIAN
<i>Address</i>	DEPARTMENT OF BIOMEDICAL SCIENCES, UNIVERSITY OF CAGLIARI
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<i>Position</i>	FULL PROFESSOR
<b>PROFILE</b>	
<i>Brief description</i>	<p><i>Iole Tomassini Barbarossa has built a strong research profile internationally recognized, mainly due to her roles as principal investigator in multidisciplinary studies aimed at analyzing the physiology of the sense of taste and its role in food preferences, nutritional status and human health. By integrating psychophysics, molecular biology, neurobiology, genetics, nutrition and electrophysiology methods, these studies have focused on the identification of the physiological basis of individual taste variability, the relationships between taste sensitivity, food behavior, nutritional status and health and on modifications of taste perception. Recently she designed and patented a new technique based on electrophysiological recordings of the bioelectric potentials generated in the taste cells of the human tongue by taste stimulation, thus obtaining a direct, objective and quantitative measure of the peripheral taste function (WO 2017/212377 A1; Device, system and relating method for the quantitative assessment of taste sensitivity).</i></p> <p><b>Scientific production:</b> 82 publications, h-index 25. <b>Patent:</b> WO 2017/212377 A1; Device, system and relating method for the quantitative assessment of taste sensitivity.</p>
<b>EDUCATION</b>	(1985) Degree in Biological Sciences, University of Cagliari, 110/100 cum laude
<b>ACADEMIC ACTIVITY</b>	
<i>(1994 - 2001)</i>	<i>Researcher of Physiology, University of Cagliari</i>
<i>(2001 - 2019)</i>	<i>Associate Professor of Physiology, University of Cagliari</i>
<i>(2007 -2012)</i>	<i>Chairman of Professors for Biological Sciences Area, University of Cagliari</i>
<i>(2012 -2015)</i>	<i>Deputy Chairman of the Department of Biomedical Sciences, University of Cagliari</i>
<i>(2018 – to present)</i>	<i>Member of the Academic Senate of University of Cagliari</i>
<i>(2019 – to present)</i>	<i>Full Professor of Physiology, Department of Biomedical Sciences, University of Cagliari</i>
<i>(2021- to present)</i>	<i>Chairman of the Department of Biomedical Sciences, University of Cagliari</i>

<b>RESEARCH ACTIVITY</b>	
<b>PRESENT INTERNATIONAL COLLABORATIONS</b>	
	<ul style="list-style-type: none"> <li>• Beverly J Tepper, Rutgers University, USA</li> <li>• Yanina Pepino, Urbana University, USA</li> <li>• Thomas Hummel, Technische Universität Dresden, Germany</li> <li>• Naim Khan, Université de Bourgogne, France.</li> </ul>
<b>LANGUAGES</b>	
	Italian (native language)
	English (fluent level)
<b>Invited Speakers at Conferences, Workshops or Seminars</b>	
(2013) Trieste University	<i>PhD School in Development and Reproduction Sciences, Title: "Characterization of the sensitivity to bitter taste of 6-n-propylthiouracil (PROP) and its association with eating behavior control".</i>
(2013) Rutgers University, USA	<i>Department of Food Science, Title: "New insights on the sensitivity to bitter taste of 6-n-propylthiouracil (PROP) and its association with a physiological mechanism of eating behavior control.</i>
(2016) Yokohama, Japan	<i>17th International Symposium on Olfaction and Taste. Title: Electrophysiological recordings from the tongue for the objective evaluation of individual variations of 6-n-propylthiouracil (PROP) sensitivity.</i>
(2016) University of Insubria, Varese, Italy	First Italian Smell and Taste Course. Title: Bioelectrical potentials from tongue as a direct and objective measure of taste sensitivity in humans
(2017) Milano University	<i>PhD School in Food Systems, Title: Taste physiology and food choice.</i>
(2018) Rimini, Italy	<i>27° Meeting of Nazionale della Società Italiana di Diabetologia. Title: "Dove tutto inizia: i recettori del gusto".</i>
<b>Direction or participation in the activities of a research group at national or international level</b>	
(2010 - 2012) Cagliari University	PI, title: <i>"Implicazioni fisiologico-nutrizionali della sensibilità gustativa a sapore amaro del 6-n-propiltiouracile (PROP) in una popolazione di origine sarda"</i>
2012 - 2013) Cagliari University	PI, title: <i>"Analisi dei fattori implicati nella modulazione delle scelte alimentari e dello stato nutrizionale in una popolazione di origine sarda"</i>

(2013 - 2015) Cagliari University	PI, title: " Ruolo del sistema endocannabinoide nella relazione tra sensibilità gustativa e composizione corporea ".
(2013 - 2015) Cagliari University	PI, title: " <i>Sensibilità gustativa e sue implicazioni nel comportamento alimentare e nello stato nutrizionale</i> "
(2013 - 2016) Cagliari University	PI, title: "Individuazione dei fattori implicati nella relazione tra sensibilità gustativa e peso corporeo", in collaboration with Prof. Beverly Tepper of Department of Food Science, Rutgers University, NJ, USA,
(2014 - 2015) Cagliari University	PI, title: "Caratterizzazione dell'effetto della somministrazione orale dell'aminoacido arginina nella modulazione della sensibilità gustativa in una popolazione geneticamente omogenea di origine sarda".
(2014 - 2017) Cagliari University	Participant, Title: "VIRTUOSO - Un osservatore sanitario virtuale per la prevenzione di malattie cardio-metaboliche nella pratica di attività fitness & wellness nei centri turistici",
(2017) Cagliari University	PI, title: "Regulation of food choice and metabolism by taste and olfaction"
(2017) Cagliari University	PI, title: "Valutazione Obiettiva della Sensibilità gustativa per strategie nutrizionali intelligenti (VOBiS)"
(2017) Cagliari University	PI, title: "Turismo esperienziale Reti Rurali e Azioni Sostenibili (Terras)"
(2018) Cagliari University	PI, title: "Studio della percezione del gusto amaro e di recettori della famiglia T2R nel SNC"
<b>Participation in committees of scientific journals</b>	
(2021)	<i>Guest Editor of special issue: Implications of Taste and Olfaction in Nutrition and Health, in Nutrients</i>
(2021)	<i>Program Committee Member of the Association of Chemoreception Sciences</i>
(2020)	<i>Editorial Bord Member, Nutrients (IF: 4.196), Section: Nutrition and Public Health.</i>
(2018)	<i>Guest Editor of special issue: Taste, diet and health in Nutrients</i>
(2010 to present)	<i>Activity as Reviewer for scientific journals: International Journal of Molecular Sciences, Journal of Human Genetics, Oncotarget, Journal of Functional Foods, Molecular Nutrition and Food Research, Journal of Biochemistry &amp; Cell Biology, Appetite, Pharmacogenomics, Nutrients, Archives of Oral Biology, BMC Research Notes, Physiology &amp; Behavior, Journal of Human Nutrition and Dietetic. British Journal of Nutrition, Food quality and Preference, Journal of Biomedical Macromolecules, Progress in Lipid Research.</i>
<b>CURRENT TEACHING ACTIVITY</b>	
(2023 to present)	Human Physiology, Degree in Medicine and Surgery
<b>Teaching assignments at Phd Research Schools</b>	
(1999 – 2001)	<i>Committee Member of the Ph.D. School Physiology and Organization of Sensory Systems, University of Cagliari</i>

(2001 - 2009)	Committee Member of the Ph.D. School in Morphological Sciences, University of Cagliari
(2010 -2015)	Committee Member of the Ph.D. School in Morphological and functional Sciences, University of Cagliari
(2017 – to present)	Committee Member of the Specialization School for Medicine, University of Cagliari
(2017 – to present)	Committee Member of the Ph.D. School in Neuroscience
(2021)	Member of the dissertation committee for Ms. N. Yousaf, PhD candidate at Rutgers University
<b>PUBLICATIONS</b>	<b>2019-2024</b>
	<ol style="list-style-type: none"> <li>1. Melis M, Grzeschuchna L, Sollai G, Hummel T, Tomassini Barbarossa I (2019) Taste disorders are partly genetically determined: Role of the TAS2R38 gene, a pilot study. <i>THE LARYNGOSCOPE</i>. Volume 129, Issue 9, Pages E307-E312, ISSN:1531-4995, doi:10.1002/lary.27828</li> <li>2. Sollai G, Melis M, Mastinu M, Pani D, Cosseddu P, Bonfiglio A, Crnjar R, Tepper JB, Tomassini Barbarossa I (2019) Human Tongue Electrophysiological Response to Oleic Acid and Its Associations with PROP Taster Status and the CD36 Polymorphism (rs1761667). <i>NUTRIENTS</i>, vol. 11, p. 315; EISSN 2072-6643, doi.org/10.3390/nu11020315</li> <li>3. Melis, M, Sollai, G., Masala, C. Pisanu, C., Cossu, G., Melis, M., Sarchioto, M., Oppo, V., Morelli, M., Crnjar, R., Hummel, T, Tomassini Barbarossa, I. (2019). Odor identification performance in idiopathic Parkinson's disease is associated with gender and the genetic variability of the olfactory binding protein. <i>Chemical Senses</i>, 44(5), 311-318. ISSN: 0379864X. DOI: 10.1093/chemse/bjz020</li> <li>4. Sollai, G., Melis, M., Magri, S., Usai, P., Hummel, T., Tomassini Barbarossa, I., Crnjar, R. (2019) Association between the rs2590498 polymorphism of Odorant Binding Protein (OBPIIa) gene and olfactory performance in healthy subjects. <i>Behavioural Brain Research</i>. 372, 17 October, Article number 112030. ISSN: 01664328. DOI: 10.1016/j.bbr.2019.112030</li> <li>5. Melis, M, Errigo, A. Crnjar, R., Pes, G.M. Tomassini Barbarossa I. (2019) TAS2R38 bitter taste receptor and attainment of exceptional longevity <i>Scientific Report</i>, Volume 9, Issue 1, Article number 18047. ISSN: 20452322. DOI: 10.1038/s41598-019-54604-1</li> <li>6. Tepper, B.J., Barbarossa, I.T. (2020) Taste, nutrition, and health, <i>Nutrients</i>, 12(1),155. ISSN: 20726643. DOI: 10.3390/nu12010155</li> <li>7. Sollai, G., Tomassini Barbarossa, I., Usai, P., Hummel, T., Crnjar, R. (2020) Association between human olfactory performance and ability to detect single compounds in complex chemical mixtures. <i>Physiology and Behavior</i>, 217,112820. ISSN: 00319384. DOI:</li> </ol>

10.1016/j.physbeh.2020.112820.

8. *Melania Melis, Mariano Mastinu, Giorgia Sollai, Danilo Paduano, Fabio Chicco, Salvatore Magri, Paolo Usai, Roberto Crnjar, Beverly J. Tepper and Iole Tomassini Barbarossa (2020) Taste Changes in Patients with Inflammatory Bowel Disease: Associations with PROP Phenotypes and polymorphisms in the salivary protein, Gustin and CD36 Receptor Genes. Nutrients 2020, 12, 409; doi:10.3390/nu12020409.*

9. *Oppo V, Melis M, Melis M, Tomassini Barbarossa I and Cossu G (2020) "Smelling and Tasting" Parkinson's Disease: Using Senses to Improve the Knowledge of the Disease. Front Aging Neurosci. 12:43. doi: 10.3389/fnagi.2020.00043.*

10. *Melis M\*, Sollai G, Mastinu M, Pani D, Cosseddu P, Bonfiglio A, Crnjar R, Tepper BJ, Tomassini Barbarossa I. Electrophysiological responses from the human tongue to the six taste qualities and their relationships with PROP taster status. Nutrients 2020 Jul; 12(7): 2017. doi: 10.3390/nu12072017.*

11. *Sarah Vascellari<sup>1</sup>, Melania Melis<sup>1</sup>, Giovanni Cossu, Marta Melis, Alessandra Serra, Vanessa Palmas, Daniela Perra, Valentina Oppo, Michele Fiorini, Roberto Cusano, Micaela Morelli, Aldo Manzin<sup>2</sup>, Iole Tomassini Barbarossa<sup>2</sup>. Genetic variants of TAS2R38 bitter taste receptor associate with distinct gut microbiota traits in Parkinson's disease: A pilot study, International Journal of Biological Macromolecules, 2020, 165, 665-674.*

12. *Yousaf, N.Y., Melis, M., Mastinu, M., Contini, C., Cabras, T., Barbarossa, I.T., Tepper, B.J. Time course of salivary protein responses to cranberry-derived polyphenol exposure as a function of prop taster status. Nutrients, 2020, 12(9),2878, pp. 1-19.*

13. *Melania M., Tomassini Barbarossa I., Hummel T., Crnjar R., Sollai G. Effect of the rs2890498 polymorphism of the OBP1a gene on the human ability to smell single molecules. Behavioural Brain Research. 2021, 402, 113127.*

14. *Sollai, G., Melis M., Mastinu, M., Paduano, D, Chicco, F., Magri, S., Usai, P., Hummel, T., Barbarossa, I.T., Crnjar, R. Olfactory function in patients with inflammatory bowel disease (Ibd) is associated with their body mass index and polymorphism in the odor binding-protein (obp1a) gene. Nutrients. 2021. 13 (2), 1-14, Article number 703.*

15. *Melania Melis, Stefano Pintus, Mariano Mastinu, Giovanni Fantola, Roberto Moroni, Marta Yanina Pepino, Iole Tomassini Barbarossa. Changes of Taste, Smell and Eating Behavior in Patients Undergoing Bariatric Surgery: Associations with PROP Phenotypes and polymorphisms in the odorant-binding Protein OBP1a and CD36 Receptor Genes. Nutrients, 2021, Volume 13, Issue 1, January 2021, Article number 250, Pages 1-22.*

16. *Melis, M.; Mastinu, M.; Pintus, S.; Cabras, T.; Crnjar, R.; Tomassini Barbarossa, I. Differences in Salivary Proteins as a Function of PROP Taster Status and Gender in Normal Weight and Obese Subjects. Molecules 2021, 26, 2244.*

<https://doi.org/10.3390/molecules26082244>.

17. Melis, M.; Haehner, A.; Mastinu, M.; Hummel, T.; Barbarossa, I.T. *Molecular and Genetic Factors Involved in Olfactory and Gustatory Deficits and Associations with Microbiota in Parkinson's Disease*. *Int. J. Mol. Sci.* 2021, 22, 4286. <https://doi.org/10.3390/ijms22084286>.

18. Naciri, L.C.; Mastinu, M.; Crnjar, R.; Tomassini Barbarossa, I.; Melis, M. *Automated Classification of 6-n-Propylthiouracil Taster Status with Machine Learning*. *Nutrients* 2022, 14, 252. <https://doi.org/10.3390/nu14020252>

19. Yousaf, N.Y.; Wu, G.; Melis, M.; Mastinu, M.; Contini, C.; Cabras, T.; Tomassini Barbarossa, I.; Zhao, L.; Lam, Y.Y.; Tepper, B.J. *Daily Exposure to a Cranberry Polyphenol Oral Rinse Alters the Oral Microbiome but Not Taste Perception in PROP Taster Status Classified Individuals*. *Nutrients* 2022, 14, 1492. <https://doi.org/10.3390/nu14071492>

20. Sollai G., Melis M. , Tomassini Barbarossa I., Crnjar R. *A polymorphism in the human gene encoding OBPIIIa affects the perceived intensity of smelled odors*. *Behavioural Brain Research* 427 (2022) 113860

21. Melis, Melania, Mastinu, Mariano, Naciri, Lala Chaimae, Muroi, Patrizia Tomassini Barbarossa, Iole. *Associations between Sweet Taste Sensitivity and Polymorphisms (SNPs) in the TAS1R2 and TAS1R3 Genes, Gender, PROP Taster Status, and Density of Fungiform Papillae in a Genetically Homogeneous Sardinian Cohort*. *Nutrients Open Access* Volume 14, Issue 22 November 2022 Article number 4903. DOI 10.3390/nu14224903

22. Melis, Melania; Tomassini Barbarossa, Iole; Crnjar, Roberto; Sollai, Giorgia. *Olfactory Sensitivity Is Associated with Body Mass Index and Polymorphism in the Voltage-Gated Potassium Channels Kv1.3*. *Nutrients Open Access* Volume 14, Issue 23 December 2022 Article number 4986 DOI 10.3390/nu14234986

23. Naciri, Lala Chaimae, Mastinu, Mariano; Crnjar, Roberto; Barbarossa, Iole Tomassini, Melania Melis. *Automated identification of the genetic variants of TAS2R38 bitter taste receptor with supervised learning*. *Computational and Structural Biotechnology Journal, Open Access*, Volume 21, Pages 1054 – 1065, January 2023 DOI 10.1016/j.csbj.2023.01.029

24. Mastinu, Mariano, Melis, Melania, Yousaf, Neeta Y, Barbarossa, Iole Tomassini, Tepper, Beverly J. *Emotional responses to taste and smell stimuli: Self-reports, physiological measures, and a potential role for individual and genetic factors*. *Journal of Food Science Open Access* sVolume 88, Pages 65– 90 March 2023. DOI 10.1111/1750-3841.16300

25. 47. Melis, M.; Tomassini Barbarossa, I.; Sollai, G. *The Implications of Taste and Olfaction in Nutrition and Health*. *Nutrients*

	<p>2023, 15, 3412. <a href="https://doi.org/10.3390/nu15153412">https://doi.org/10.3390/nu15153412</a>.</p> <p>26. Naciri, L.C.; Mastinu, M.; Melis, M.; Green, T.; Wolf, A.; Hummel, T.; Tomassini Barbarossa, I. A Supervised Learning Regression Method for the Analysis of the Taste Functions of Healthy Controls and Patients with Chemosensory Loss. <i>Biomedicines</i> 2023, 11, 2133. <a href="https://doi.org/10.3390/biomedicines11082133">https://doi.org/10.3390/biomedicines11082133</a></p> <p>27. Naciri, L.C.; Mastinu, M.; Melis, M.; Green, T.; Wolf, A.; Hummel, T.; Tomassini Barbarossa, I. A supervised learning regression method for the analysis of oral sensitivity of healthy individuals and patients with chemosensory loss. <i>Scientific Report</i>, (2023) 13:17581. <a href="https://doi.org/10.1038/s41598-023-44817-w">doi.org/10.1038/s41598-023-44817-w</a></p> <p>28. Maria Piochi, Sara Spinelli, Melania Melis, Monica Laureati, Emma Feeney, Lisa Methven, Qian Yang, Erminio Monteleone, Luisa Torri, Rebecca Ford, Ella Pagliarini, Iole Tomassini Barbarossa, Caterina Dinnella. Methods for fungiform papillae assessment: A collaborative study among European research units. <i>Food Quality and Preference</i>, Volume 113, 2024, 105076, ISSN 0950-3293, <a href="https://doi.org/10.1016/j.foodqual.2023.105076">https://doi.org/10.1016/j.foodqual.2023.105076</a>.</p> <p>29. Melis, M.; Loi, E.; Mastinu, M.; Naciri, L.C.; Zavattari, P.; Barbarossa, I.T. Gene Methylation Affects Salivary Levels of the Taste Buds' Trophic Factor, Gustin Protein. <i>Nutrients</i> 2024, 16, 1304. <a href="https://doi.org/10.3390/nu16091304">https://doi.org/10.3390/nu16091304</a></p>
<p>In compliance with the Italian legislative Decree no. 196 dated 30/06/2003, I hereby authorize you to use and process my personal details contained in this document.</p>	

Place, date  
Cagliari, 3<sup>rd</sup> April, 2025

Signature

