Curriculum vitae
GABRIELLA TESTA

Personal details
Born in: Cerignola (FG)
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Educations
- **2005**: Bachelor's degree in Industrial Chemistry, Faculty of Mathematics Physics and Natural Science, Sapienza University, Rome, Italy
- **2008**: Master of Science in Organic Industrial Chemistry and Biochemistry, Faculty of Mathematics Physics and Natural Science, Sapienza University, Rome, Italy
- **2008**: Professional qualification as chemist, Sapienza University, Rome, Italy
- **2013**: PhD degree in Experimental Medicine and Therapy, Department of Clinical and Biological Sciences (DSCB), University of Turin, Italy
- **2021**: National Scientific Habilitation (ASN) as Associate Professor in General Pathology and Clinical Pathology (Sector 06/A2), Ministry of Education, Universities and Research (MIUR)

Professional experiences and current position
- **2009-2012:** PhD research fellowship for the project 'Lipid oxidation products in the pathogenesis of major chronic diseases', DSCB, University of Turin, Italy
- **2013-2015:** Post-doc research fellowship for the project 'Mass spectrometric profile of cholesterol oxidation products in Alzheimer's brain: oxysterol-induced neurodegeneration and disease progression', DSCB, University of Turin, Italy
- **2015-2016**: Post-doc research fellowship for the project 'Implication of cholesterol oxidation products and aldehyde 4-hydroxynonenal in Alzheimer's disease progression', DSCB, University of Turin, Italy
- **2016-2017:** Post-doc research fellowship for the project 'Oxidized cholesterol and neuronal survival in Alzheimer's disease progression', DSCB, University of Turin, Italy
- **2017-2018:** Post-doc research fellowship for the project 'Neuronal survival modulated by 24-hydroxycholesterol: role of sirtuin-1 in Alzheimer's disease', DSCB, University of Turin, Italy
- **2018-2020:** Post-doc research fellowship for the project 'A new strategy based on modulation of neuroprotection mechanisms to prevent Alzheimer's disease', DSCB, University of Turin, Italy
- **2020-2021:** Grant for the project 'Study of the neuroprotective mechanisms modulated by 24-hydroxycholesterol: a new therapeutic strategy for the treatment of Alzheimer's disease', DSCB, University of Turin, Italy
- **2021:** Grant for the project 'Study of the role of the PCSK9 enzyme in the brain: identification and validation of a new target for the treatment of Alzheimer's disease', DSCB, University of Turin, Italy
- **2022:** Post-doctoral Fellowship Research Grant Fondazione Umberto Veronesi for the project 'Hydroxytyrosol: a promising olive oil compound to counteract oxysterol-induced neuroinflammation in Alzheimer's disease', DSCB, University of Turin, Italy
- **2022-present:** Type B fixed-term researcher (RTD-B), DSCB, University of Turin, Italy

Participation to Directive Boards of Scientific Societies and/or Institutions:
- **2009:** Member of the Society for Free Radical Research - Europe (SFRR-E)
- **2011:** Member of the European Network for Oxysterol Research (ENOR) (group of Experimental and Translational Pathology)
- **2013:** Member of Italian Society of Pathology and Translational Medicine (SIPMeT).

Honors
- **2008:** *'Vittorio Crescenzi Award'* from Fidia Farmaceutici S.p.A. for the best graduate in Chemistry at the Faculty of Mathematics, Physics and Natural Science at Sapienza University of Rome
- **2018:** *'Caligara Award'* from Franco and Marilisa Caligara Foundation of Turin for High Interdisciplinary Education
- **2019:** *'2019 Antioxidants Award'* from the international open access journal Antioxidants for a postdoctoral researcher in the area of antioxidants
- **2022:** *'2022 Research Grant'* from Fondazione Umberto Veronesi

Teaching activity

- Pathology and Laboratory Diagnostics - Module of General Pathology and Pathophysiology, Nursing Degree Course of Orbassano, School of Medicine, University of Turin, Italy
- Pathology and Laboratory Diagnostics - Module of General Pathophysiology, Immunology and General Pathology, Nursing Degree Course, A.O.U. City of Health and Science of Turin, School of Medicine, University of Turin, Italy
- General Pathology Pharmacology and Clinical Sciences - Module of General Pathology, Physiotherapy Degree Course, A.O.U. City of Health and Science of Turin, School of Medicine, University of Turin, Italy
- Biomedical and Clinical Sciences - Module of General Pathology, Psychiatric Rehabilitation Techniques Degree Course, School of Medicine, University of Turin, Italy
- Clinical and management processes in rehabilitation - Module of General Pathology, Health Professions of Rehabilitation Sciences Post Graduate Degree Course, School of Medicine, University of Turin, Italy

Research main topics

- Study of the role of oxidative stress and lipid peroxidation in the pathogenesis of Alzheimer's disease, with attention to the implication of the cholesterol oxidation products (oxysterols) and other oxidized lipids, such as 4-hydroxynonenal, through the analysis of (i) the pro-inflammatory and cytotoxic effect of oxysterols and the molecular mechanisms involved *in vitro*, *in vivo* and on autopsy models of human brains with Alzheimer's disease, and of (ii) the neuroprotective action the oxysterol 24-hydroxycholesterol present in the brain.
- Development of preventive and/or therapeutic strategies for the treatment of Alzheimer's disease through the study of (i) the action of natural substances present in food, such as polyphenols, as bioactive molecules useful in counteracting oxidative stress and inflammatory response, and of (ii) the action of engineered nanoparticles to delivery neuroprotective molecules to the brain.

Main projects as PI

- **2022-2023**: 'CYP46A1 enzyme: a new therapeutic target to prevent Tau hyperphosphorylation in Alzheimer's disease' (GRANT for INTERNATIONALIZATION 2022, University of Turin).
- **2023-2026:** 'Nutraceutical approach to counteract Alzheimer's disease: intranasal administration of hydroxytyrosol of olive oil' (CRT Foundation).

Bibliometry (2009-present) (*www.scopus.com*)
Publications: 38
H-index: 24
Citations: 1702

10 best publications

1. **Testa G.**, Gamba P., Di Scipio F., Sprio A.E., Salamone P., Gargiulo S., Sottero B., Biasi F., Berta G.N., Poli G., Leonarduzzi G. *Potentiation of amyloid-β peptide neurotoxicity in human dental-pulp neuron-like cells by the membrane lipid peroxidation product 4-hydroxynonenal*, Free Radic. Biol. Med., **2012**, 53(9): 1708-1717.
2. **Testa G.**, Biasi F., Poli G., Chiarpotto E. *Calorie restriction and dietary restriction mimetics: a strategy for improving healthy aging and longevity*, Curr. Pharm. Des., **2014**, 20(18): 2950-2977.
3. **Testa G.**, Gamba P., Badilli U., Gargiulo S., Maina M., Guina T., Calfapietra S., Biasi F., Cavalli R., Poli G., Leonarduzzi G. *Loading into nanoparticles improves quercetin's efficacy in preventing neuroinflammation induced by oxysterols*, PLoS One, **2014**, 9(5): e96795. doi: 10.1371/journal.pone.0096795.
4. Gamba P.*, **Testa G.***, Gargiulo S., Staurenghi E., Poli G., Leonarduzzi G. *Oxidized cholesterol as the driving force behind the development of Alzheimer's disease*, Front. Aging Neurosci., **2015**, 7(119): 1-20. ***co-first authorship.**
5. **Testa G.**, Staurenghi E., Zerbinati C., Gargiulo S., Iuliano L., Giaccone G., Fantò F., Poli G., Leonarduzzi G., Gamba P. *Changes in brain oxysterols at different stages of Alzheimer's disease: their involvement in neuroinflammation*, Redox Biol., **2016**, 10: 24-33.
6. **Testa G.**, Staurenghi E., Giannelli S., Gargiulo S., Guglielmotto M., Tabaton M., Tamagno E., Gamba P., Leonarduzzi G. *A silver lining for 24-hydroxycholesterol in Alzheimer's disease: the involvement of neuroprotective enzyme sirtuin 1*, Redox Biol., **2018**, 17: 423-431.
7. Sottero B., Rossin D., Staurenghi E., Gamba P., Poli G., **Testa G.**, *Omics analysis of oxysterols to better understand their pathophysiological role*, Free Radic. Biol. Med., **2019**, 144: 55-71.
8. **Testa G.**, Staurenghi E., Giannelli S., Sottero B., Gargiulo S., Poli G., Gamba P., Leonarduzzi G. *Up-regulation of PCSK6 by lipid oxidation products: a possible role in atherosclerosis*, Biochimie, **2021**, 181: 191-203.
9. Sottero B.*, **Testa G.***, Gamba P., Staurenghi E., Giannelli S., Leonarduzzi G., *Macrophage polarization by potential nutraceutical compounds: a strategic approach to counteract inflammation in atherosclerosis*, Free Radic. Biol. Med., **2022**, 181:251-269. ***co-first authorship.**
10. **Testa G.**, Giannelli S., Sottero B., Staurenghi E., Giaccone G., Caroppo P., Gamba P., Leonarduzzi G. *24-Hydroxycholesterol Induces Tau Proteasome-Dependent Degradation via the SIRT1/PGC1α/Nrf2 Pathway: A Potential Mechanism to Counteract Alzheimer's Disease*, Antioxidants (Basel), **2023**, 12, 631.

More relevant publications in the last 5 yrs (2018-2022)

1. Vurusaner B., Gargiulo S., **Testa G.**, Gamba P., Leonarduzzi G., Poli G., Basaga H. *The role of autophagy in survival response induced by 27-hydroxycholesterol in human promonocytic cells*, Redox Biol., **2018**, 17: 400-410.
2. **Testa G.**, Staurenghi E., Giannelli S., Gargiulo S., Guglielmotto M., Tabaton M., Tamagno E., Gamba P., Leonarduzzi G. *A silver lining for 24-hydroxycholesterol in Alzheimer's disease: the involvement of neuroprotective enzyme sirtuin 1*, Redox Biol., **2018**, 17: 423-431.
3. **Testa G.**, Rossin D., Poli G., Biasi F., Leonarduzzi G*., Implication of oxysterols in chronic inflammatory human diseases*, Biochimie, **2018**, 153: 220-231.
4. Civra A., Francese R., Gamba P., **Testa G.**, Cagno V., Poli G., Lembo D. *25-Hydroxycholesterol and 27-hydroxycholesterol inhibit human rotavirus 2 infection by sequestering viral particles into late endosomes*, Redox Biol., **2018**, 19: 318-330.
5. Gargiulo S., Rossin D., **Testa G.**, Gamba P., Staurenghi E., Biasi F., Poli G., Leonarduzzi G. *Up-regulation of COX-2 and mPGES-1 by 27-hydroxycholesterol and 4-hydroxynonenal: a crucial role in atherosclerotic plaque instability*, Free Radic. Biol. Med., **2018**, 129: 354-363.
6. Sottero B., Leonarduzzi G., **Testa G.**, Gargiulo S., Poli G., Biasi F. *Lipid Oxidation Derived Aldehydes and Oxysterols between Health and Disease*, Eur J Lipid Sci Technol., **2019**, 1700047: 1-16.
7. Sottero B., Rossin D., Staurenghi E., Gamba P., Poli G., **Testa G.**, *Omics analysis of oxysterols to better understand their pathophysiological role*, Free Radic. Biol. Med., **2019**, 144: 55-71.
8. Rossin D., Barbosa-Pereira L., Iaia N., **Testa G.**, Sottero B., Poli G., Zeppa G., Biasi F. *A Dietary Mixture of Oxysterols Induces In Vitro Intestinal Inflammation through TLR2/4 Activation: The Protective Effect of Cocoa Bean Shells*, Antioxidants (Basel), **2019**, 8(6): pii: E151.
9. Gamba P.*, Staurenghi E.*, **Testa G.**, Giannelli S., Sottero B., Leonarduzzi G. *A Crosstalk Between Brain Cholesterol Oxidation and Glucose Metabolism in Alzheimer's Disease*, Front. Neurosci., **2019**, 13: 556. ***co-first authorship.**
10. Staurenghi E., Cerrato V., Gamba P., **Testa G.**, Giannelli S., Leoni V., Caccia C., Buffo V., Noble W., Gomez Perez-Nievas B., Leonarduzzi G. *Oxysterols present in Alzheimer's disease brain induce synaptotoxicity by activating astrocytes: a major role for lipocalin-2*, Redox Biol., **2021**, 39: 101837.
11. **Testa G.**, Staurenghi E., Giannelli S., Sottero B., Gargiulo S., Poli G., Gamba P., Leonarduzzi G. *Up-regulation of PCSK6 by lipid oxidation products: a possible role in atherosclerosis*, Biochimie, **2021**, 181: 191-203.
12. Gamba P., Giannelli S., Staurenghi E., **Testa G.**, Sottero B., Biasi F., Poli G., Leonarduzzi G. *The Controversial Role of 24-S-Hydroxycholesterol in Alzheimer's Disease*, Antioxidants (Basel), **2021**, 10(5): 740.
13. Staurenghi E., Giannelli S., **Testa G.**, Sottero B., Leonarduzzi G., Gamba P., *Cholesterol dysmetabolism in Alzheimer's disease: A starring role for astrocytes?* Antioxidants (Basel), **2021**, 10:1890.
14. Sottero B.*, **Testa G.***, Gamba P., Staurenghi E., Giannelli S., Leonarduzzi G., *Macrophage polarization by potential nutraceutical compounds: a strategic approach to counteract inflammation in atherosclerosis*, Free Radic. Biol. Med., **2022**, 181:251-269. ***co-first authorship.**
15. Staurenghi E., Leoni V., Lo Iacono M., Sottero B., **Testa G.**, Giannelli S., Leonarduzzi G., Gamba P., *ApoE3 vs. ApoE4 Astrocytes: A Detailed Analysis Provides New Insights into Differences in Cholesterol Homeostasis*, Antioxidants (Basel), **2022**, 11(11): 2168.
16. **Testa G.**, Giannelli S., Sottero B., Staurenghi E., Giaccone G., Caroppo P., Gamba P., Leonarduzzi G. *24-Hydroxycholesterol Induces Tau Proteasome-Dependent Degradation via the SIRT1/PGC1α/Nrf2 Pathway: A Potential Mechanism to Counteract Alzheimer's Disease*, Antioxidants (Basel), **2023**, 12, 631.

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