

## CURRICULUM VITAE

### Prof. Barbara Tavazzi

**NAME:** Barbara TAVAZZI

**BIRTH:** 10 January 1959, Genoa, Italy

**ADDRESS:** Institute of Biochemistry and Clinical Biochemistry, Catholic University of Rome, Largo Francesco Vito 1, 00168 Rome.

#### **CURRENT POSITION**

**University (since 2002 to date):** Associate Professor of Biochemistry  
Institute of Biochemistry and Clinical Biochemistry,  
Catholic University of Rome  
Largo Francesco Vito 1, 00168 Rome, Italy

**Clinical activity (since 2005 to date):** Medical manager  
Diagnostic Area and Infectious Diseases,  
Fondazione Policlinico Universitario A. Gemelli IRCCS  
UOC Clinical Chemistry,  
Largo A. Gemelli 8, 00168 Rome, Italy

#### **EDUCATION**

**1978:** B.A. (full marks), Rome, Italy

**1985:** Degree in Biological Sciences (full marks), University of Rome La Sapienza, final score of 110/110. Thesis: "The differentiation of neuromuscular junctions in Mammals"; supervisor Dr.ssa F. Leone.

**1986:** State examination for the qualification at the National Council of Biology.

**1990:** PhD in Biochemistry, thesis: "Effect of exogenous fructose-1,6-bisphosphate on the isolated rat heart in different perfusion conditions". Supervisor Prof. B. Giardina.

#### **ACADEMIC AND EXTRA-ACADEMIC CAREER**

**1983-1985:** Research internship as undergraduate student, Institute of Physiology, University of Rome La Sapienza, Rome, Advisor: Dr. F. Leone.

**1986-1987:** Post-graduate fellow, Department of Experimental Medicine and Biochemical Sciences, University of Rome Tor Vergata, Rome. Advisor: Prof. B. Giardina.

**1987-1990:** PhD fellowship in Biochemistry, University of Rome La Sapienza and University of Rome Tor Vergata, (affiliated university) Rome.

**1991:** Visiting researcher (ACSM International Scholar), Department of Kinesiology and Health Education, University of Texas at Austin, Texas, USA. Advisor: Prof. J.W. Starnes.

**1991-2001:** Researcher in Biochemistry, Department of Experimental Medicine and Biochemical Sciences, University of Rome Tor Vergata, Rome.

**2002- to date:** Associate Professor in Biochemistry (BIO/10) (E05A-BIOCHIMICA), Institute of Biochemistry and Clinical Biochemistry, Catholic University of Rome, Italy.

**2005 - to date:** Employment as Managing Doctor, Clinical Chemistry Unit, (Area Diagnostica di Laboratorio e Malattie Infettive) Fondazione Policlinico Universitario A. Gemelli IRCCS. , Rome, Italy

**2009- to date:** Member of the Register of Auditors of Italian Ministry or the University and Research (MIUR) for the evaluation of ministerial research programs for the following Sectors of the European Research Council:

- LS1\_2-General biochemistry and metabolism;
- LS2\_4-Metabolomics;
- LS5\_3-Neurochemistry and neuropharmacology.

**2010 -2019:** member of an academic spin-off (LTA-Biotech srl) of the University of Catania.

**2014:** National certification as **Full Professor in Biochemistry (ASN - MIUR) (competition sector E05A, scientific sector BIO-10 BIOCHIMICA) BIO/10** (expiring date 01/06/2020).

**2015:** Activities of external referee of Joint Projects 2015 research projects for the University of Verona.

**2018 to date:** Activities of external referee for the research projects of the Medical Council and Israel Sciences Foundation

#### **PATENT OF INVENTION**

- Amorini AM, Giardina B, Lazzarino G, Leone P, Tavazzi B. “Metodo per la determinazione simultanea di derivati delle purine e pirimidine, degli amminoacidi n-acetilati e degli acidi dicarbossilici in un campione biologico mediante cromatografia liquida ad elevate prestazioni (HPLC) e relativo kit”. Brevetto N. 0001359858 (domanda n. 102005901289814 (RM2005A000085). Data Brevetto: 4 maggio 2009.
- Amorini AM, Di Pietro V, Giardina B, Lazzarino G, Lorenzi F, Tavazzi B. “Metodo per la preparazione e l' uso di un estratto arricchito in cianidina-3-o-beta-glucopiranoside e suoi derivati da frutti e vegetali contenenti detta antocianina e per la purificazione e l' uso di cianidina- 3-O-beta- glucopiranoside e suoi derivati da tale estratto”. Brevetto N. 0001371767 (domanda n. 102006901409766 (RM2006A000233). Data Brevetto: 15 marzo 2010.
- Amorini AM, Di Pietro V, Giardina B, Lazzarino G, Lorenzi F, Signoretti S, Tavazzi B, Vagnozzi R. “Sistema automatizzato di prelievo, rilevazione e analisi di liquidi biologici per il monitoraggio biochimico-clinico di un paziente preferibilmente in terapia intensiva”. Brevetto N. 0001379086 (domanda n. 102007901512092 (RM2007A000200). Data Brevetto: 30 agosto 2010.
- Lazzarino G, Tavazzi B, Lazzarino G, Amorini AM, Di Stasio E, Gasperini C. “Biomarcatori e metodi per la diagnosi in vitro di sclerosi multipla” Brevetto No. 102016000109735, Data deposito: 31 ottobre 2016.

## GRANTS

**1998 – 2000:** Ministero del Lavoro e della Previdenza Sociale, ricerca n. 1049.

**2000:** MIUR PROGETTO GIOVANI RICERCATORI

**2001 – 2003:** MIUR (PRIN cofin) progetto n. 2001055984\_002

**2003 – 2005:** MIUR (PRIN cofin) progetto n. 2003058409\_003

**2007 – 2009:** MIUR (PRIN cofin) progetto n. n. 2007JBHZ5F\_002

**2003 - to date:** linea D1 –UNICATT fondi per la ricerca (MIUR-ex 60%)

**2017:** Neuregenix Ltd, Edgbaston, Birmingham (UK), project: *“TM-6: investigating effects of a TikoMed compound on TBI metabolites”*

**2018:** Neuregenix Ltd, Edgbaston, Birmingham (UK), project: *“Study of the effects of the administration of different concentrations of the ILB compound (dextran sulfate derivative) on cerebral metabolic disorders induced by a diffuse traumatic brain injury in the experimental animal model”*.

**2019:** Neuregenix Ltd, Edgbaston, Birmingham (UK), project: *“ILB-15: Measuring targeted biomarkers in serum of patients with ALS”*

## SCIENTIFIC ACTIVITY

- Studies on energy metabolism, molecular mechanisms and biochemical evaluation of tissue damage after ischemia and reperfusion in the isolated rat heart.
- Research of plasma biochemical markers for the evaluation of free radical damage after ischemia and reperfusion (in animals and in human beings).
- Research and development of new analytical methods using high-resolution liquid chromatography (HPLC) for the determination of the main products of energy metabolism and of oxidative-nitrosative stresses
- Studies of the effect of ROS on different cell lines, and evaluation of the antioxidant activity of natural and synthetic compounds in different experimental models in vivo and in vitro.
- Energy metabolism, molecular mechanisms and biochemical evaluation of brain tissue damage in a moderate and severe traumatic brain injury (TBI) animal model; studies on severe head injury in humans by biochemical analysis of cerebrospinal fluid and cerebral microdialysis.
- Research and development of new analytical methods using high-resolution liquid chromatography (HPLC) for the determination of the main products of cell metabolism of genetic diseases linked to metabolic alterations of purines, pyrimidines, N-acetylated amino acids and carboxylic acids.
- Study of the biochemical-clinical and molecular diagnosis of patients with various rare and non-hereditary metabolic diseases, for the screening of populations and for the monitoring of patients suffering from acute and chronic pathological conditions.
- Studies of the diagnosis and metabolic-biochemical evaluation of chronic neurodegenerative disease Multiple Sclerosis, research of blood circulating biomarkers for the diagnosis and/or in vitro prognosis of Multiple Sclerosis, also valid for the identification of the phenotypes characterizing this disease and the degree of progression of the disease itself.

The research activity has produced to **128** publications on International and National Journals (with high Impact Factor value), **6 book chapters; 25 Congress abstracts published in International Journals and more of 200 abstracts** of researches as invited speaker or as poster in International and National Congress Proceedings.

**Bibliometric parameters:**

Scopus            H index = 35;            Total citation number= 4284  
WOS              H index = 34;            Total citation number= 4008;    citation average = 31.31

**Peer reviewer activity for the following International Journal:**

Analytical Biochemistry; Antioxidants (Basel); Antioxidant & Redox Signal; Biochimica Biophysica Acta; Biological Chemistry; British Journal of Sports Medicine; Clinical Biochemistry; International Journal of Molecular Sciences; Journal of the Science of Food and Agriculture; Molecular and Cellular Biochemistry; Nucleosides Nucleotides and Nucleic Acids; Journal of Neurochemistry; International Journal of Nutrition; BioMed Research International.

**2018 at to date: Member of the Editorial Board of the International Journal Antioxidants (Basel) (MDPI Ed.)**

**1992-2003:** Author of drafting and reviewing of Biochemistry for the following encyclopedia

- "La Piccola Treccani"
- "Supplemento del Lessico Universale"

**1992-2003:** Author of the scientific revisions in the Technical Section for the following Treccani products:

- "L'Universo del Corpo"
- "Appendice 2000"
- "Frontiere della Vita"
- "Storia della Scienza"

**MEMBERSHIP IN SCIENTIFIC SOCIETIES**

- Società Italiana di Biochimica e Biologia Molecolare (SIB) (01/1990 to date)
- Society for Free Radical Research International (SFRR). (06/1990 - 06/2005)

**NATIONAL SCIENTIFIC COLLABORATIONS**

- Prof. Giuseppe Lazzarino, Dipartimento di Scienze Biomediche e Biotecnologiche, Università di Catania.
- Prof. Roberto Vagnozzi, Department of Neuroscience, University of Rome "Tor Vergata".
- Stefano Dr. Stefano Signoretti, Department of Neurosciences and Neurosurgery, San Camillo-Forlanini Hospital, Rome.
- Claudio Dr. Claudio Gasperini, Department of Neurosciences San Camillo-Forlanini Hospital, Rome.
- Dr. Luciano Cristofori, Maggiore Hospital "Borgo Trento", Department of Neurosurgery, Verona.
- Profs. Guido Rasi, Prof. Paola Sinibaldi-Vallebona, Department of Experimental Medicine and Biochemical Sciences, University of Rome "Tor Vergata".
- Anna Dr. Anna Lucia Serafino, Institute of Experimental Medicine, I.S.M., National Research Council C.N.R. From Rome.
- Prof. Armando Dagianti, Prof. Maria Penco, Department of Cardiovascular and Respiratory Sciences, University of Rome "La Sapienza" and Department of Internal Medicine, University of L'Aquila.
- Collaborations with various research groups of the Catholic University of Rome

## **INTERNATIONAL SCIENTIFIC COLLABORATIONS**

- Proff. Ann Logan e Antonio Belli, Dr.ssa Valentina Di Pietro, Neurotrauma & Neurodegeneration Div., Institute of Biomedical Research (West), The Medical School of Clinical and Experimental Medicine, College of Medical and Dental Sciences, University of Birmingham, UK.
- Prof.ssa Paola Leone, Cell & Gene Therapy Center, Department of Neurosurgery, UMDNJ-Robert Wood Johnson Medical School, Camden, NJ, U.S.A.
- Proff. Anthony Marmarou e Panos Fatouros, Division of Neurosurgery, Virginia Commonwealth University, Medical College of Virginia, Richmond, Virginia, U.S.A.
- Proff. Nazareno Paolucci e David Kass, Division of Cardiology, Johns Hopkins Medical Institutions, Baltimore, MD, U.S.A.
- Prof. Joseph W. Starnes, Department of Kinesiology and Health Education, University of Texas at Austin, U.S.A.
- Prof. Ilmo Hassinen, e Dr. Matti Nuutinen, Department of Medical Biochemistry and Department of Pediatrics, University of Oulu, Finland
- Dr. Keijo Peuhkurinen, Department of Internal Medicine, University of Oulu, Finland.
- Prof. Joe M. McCord, Department of Biochemistry and Molecular Biology, Webb-Waring Institute for Biomedical Research, University of Colorado, Denver, U.S.A.
- Proff. Michael J. Rovetto e Christopher Hardin, Medical Pharmacology & Physiology Dalton Cardiovascular Research Center Investigator, University of Missouri, Columbia, MO, U.S.A.

## **TEACHING ACTIVITY**

### **FACULTY OF MEDICINE AND SURGERY - UNIVERSITY OF ROME "TOR VERGATA".**

**1988-2002:** lectures and practices in *Chemistry and Propaedeutic Biochemistry* (degree course in Medicine and Surgery) and *Chemistry* (degree in Dentistry and Dental Prosthetics); member of the Examination Commission for the aforementioned courses.

**1993-2001:** integrative lectures of the course of *Chemistry and Propaedeutic Biochemistry* for the Diploma Universitario of Biomedical Laboratory Health Technicians.

**1994-2001:** integrative lectures of the course of *Chemistry and Propaedeutic Biochemistry* for the Diploma Universitario of Dieticians.

**1997-2001:** integrative lectures of the course of *Chemistry and Propaedeutic Biochemistry* for the Diploma Universitario of Orthopaedic Technicians and Podiatrist Technicians, and of the course of *General organic and inorganic chemistry* for Diploma Universitario of Medical Radiology Medical Technicians .

**2001-2002:** lectures of *Chemistry and Propaedeutic Biochemistry* for the three-year degree in Dietician and Biomedical Laboratory Diagnostic Techniques.

**2001-2002:** lectures of *General Organic and Inorganic Chemistry* for the three-year degree in Radiological Diagnostic Techniques.

**1988-2002:** Tutorial activities of didactic support for the students of the degree in Medicine and Surgery, of the degree in Dentistry and Dental Prosthetics (since 2001 three-year degree courses)

**1988-2002:** Supervisor of experimental theses (15) of the Degree in Biological Sciences, of the Faculty of Mathematical, Physical and Natural Sciences, and of the Diploma Universitario for Biomedical Laboratory Health Technician.

### **FACULTY OF MEDICINE AND SURGERY - CATHOLIC UNIVERSITY OF ROME**

**2002 to date:** lectures of *Biochemistry*, integrated course in Biochemistry and Molecular Biology, degree in Medicine and Surgery.

**2002 -2018:** Lectures of *Biochemistry and Molecular Biology Laboratory*, in the integrated course of *Elements of Applied Biochemistry*, three-year course in Health Biotechnology.

**2006-2007** Lectures of *Advanced Techniques for Screening of Inherited Metabolic Diseases* in the University Master's Degree "Clinical Molecular Biology".

**2010 - 2014:** Lectures of *Organic Chemistry and Inorganic Chemistry Laboratory*, three-year degree in Cosmetology- Sciences and Techniques.

**2013 to date:** Lectures of *Chemistry/Biochemistry*, integrated course of Molecules and Cells, Medicine and Surgery Degree Course.

**2013-2017.** Practices of *Chemistry / Biochemistry Practicals*, integrated course of *Molecules and Cells*, Degree in Medicine and Surgery.

**2013 to date:** Lectures of *Heart: Biochemistry*, integrated course of *Organic and Functional System I*, Degree in Medicine and Surgery.

**2013 to date:** Lectures of *Skeletal-Muscle System: Biochemistry*, integrated course of *Organic and Functional System I*, Degree in Medicine and Surgery.

**2013-2017:** Practices of *Skeletal-Muscle System: Biochemistry Practicals*, integrated course of *Organic and Functional System I*, Degree in Medicine and Surgery.

**2014-2015 and 2016-2017:** Lectures of *Biochemistry*, integrated course of *Molecular bases of life*, three-year degree e in Nursing, at the associated headquarters Foundation 'Giovanni Paolo II', IRCCS, Campobasso.

**2015-2016; 2017-2018; 2018-2019:** Lectures of *Chemical Laboratory Techniques*, integrated course in *Organic Chemistry and Chemical Laboratory Practices* (course coordinator), three-year degree in Cosmetology-Sciences and Technologies.

**2017-2018:** Lectures of *Chemistry and Biochemistry*, three-year degree in Orthoptics and Ophthalmological Assistance, at the associated headquarter of the Provincial High School for Health "Claudiana", Bolzano.

**2018-2019:** Lectures of *Chemistry and Biochemistry*, three-year degree in Obstetrics, at the associated headquarter of the Provincial High School for Health "Claudiana", Bolzano

**2018-2019:** Lectures of *Biochemistry*, integrated course of *Basic Sciences*, , Degree in Medicine and Surgery.

**2018-2019:** Lectures of *Biochemistry*,, integrated course of *Biomedical Sciences II* (course coordinator) Degree in Medicine and Surgery

**2019-2020:** Lectures of *Chemistry and Biochemistry*, three-year degree in Dietistics, at the associated headquarter of the Provincial High School for Health "Claudiana", Bolzano.

**2019-2020:** Lectures of *Chemistry and Biochemistry*, three-year degree course in Biomedical Laboratory Techniques, headquarters of the Provincial High School of Health-Claudiana, Bolzano.

**2019-2020:** Lectures of *General Biochemistry*, three-year degree in Dietetics, headquarters of the Provincial High School of Health-Claudiana, Bolzano

**2002 to date:** Tutorial activities and study support for Biochemistry and Molecular Biology, also practices, for students of:

- degree in Medicine and Surgery,
- three-year degree in Health Biotechnology.
- three-year degree in Cosmetology Sciences and Techniques
- specialist degree in Medical Biotechnology.

#### **PhD Academic Board member**

**2003 - 2005:** PhD in "Biochemical Studies of the Proteome", Catholic University of the Sacred Heart.

**2005 - 2012:** PhD in "Biochemistry and Clinical Molecular Biology", DOT0557858, Catholic University of the Sacred Heart.

2006-2013: PhD in "Proteomics", DOT0357453, Catholic University of the Sacred Heart.

2013 to date: Member of the Faculty Board of the Research Doctorate in Basic Biomedical Sciences and Public Health, DOT1357855, Doctoral School of the Catholic University of the Sacred Heart.

**2003 to date:** Assistance and tutoring of the doctoral students in the field of outstanding PhDs, at the Institute of Biochemistry and Clinical Biochemistry, preparation and drafting of experimental theses for obtaining the degree.

She is and has also been the supervisor of many (about 40) experimental theses for the attainment of the Degree in the three-year degree in: Health Biotechnologies, Cosmetology- Sciences and Techniques (Catholic University of Rome); Master's Degree in Pharmaceutical Biotechnology (La Sapienza University of Rome) and Master's Degree in Medical Biotechnology (Catholic University and La Sapienza di Roma).

From the time when the evaluation of didactics (2010-2011 academic year) was introduced at the Catholic University of Rome, over 85% of favourable opinions have been obtained by the students of the various courses held for its educational activities.

#### **Autorizzazione al trattamento dei dati personali ai sensi della legge 675/96.**

La sottoscritta Barbara Tavazzi, nata a Genova il 10 Gennaio 1959, residente a Roma, ai sensi della legge del 31 Dicembre 1996 n. 675 "Tutela delle persone e di altri soggetti rispetto al trattamento dei dati personali", autorizza al trattamento dei propri dati personali contenuti nel curriculum vitae.

Prof.ssa Barbara Tavazzi

