

CURRICULUM VITAE OF GHEORGHE BENGA (SEP. 2016)
(DETAILED ON www.gheorghebenga.ro)

I. PERSONAL DATA

1. Name: GHEORGHE BENGA
2. Date and Place of Birth: January 26, 1944, Timișoara, Romania
3. Citizenship and Nationality: Romanian
4. Family data: - married with ILEANA BENGA (Professor Consultant of Pediatric Neurology, "Iuliu Hațieganu" University of Medicine and Pharmacy (UMP) Cluj-Napoca, Senior Physician ("Medic primar", the highest professional qualification of physicians in Romania) of Pediatric Neuropsychiatry, "Regina Maria" Medical Center, Cluj-Napoca, Romania
 - we have two children: Benga Oana, Benga Ileana
5. Permanent Address: Aleea Muscel No. 19, Ap. 11, 400076 Cluj-Napoca, Romania, Phone: 40-264441725; E-mail: ggbenga@gmail.com

II. EDUCATION, DEGREES

1. **1950-1961: "Emil Racoviță" Lycée**, Graduated in 1961 at the top of the year, honored with a "Diploma for exceptional results in professional activities"; mark 10 (maximum) at Bacalaureate
2. **Universities:**
 - 1961-1967:** Faculty of General Medicine, University of Medicine and Pharmacy (UMP) Cluj; 1964: Special Fellowship for Outstanding Students during medical studies; M.D. 1967
 - 1968- 1972:** Faculty of Chemistry, "Babeș-Bolyai" University Cluj-Napoca, B.Sc. (Chemistry) 1972
3. **Specializations and Post-Graduate Studies:**
 - 1969-1972:** PhD student, Department of Biochemistry, UMP Cluj (Professor Dr. Doc. Ion Manta)
 - 1972-1973:** Specialization in Chemistry of Surfaces and Macromolecules, Faculty of Chemistry, "Babeș-Bolyai" University Cluj-Napoca
 - 1974:** accredited as Principal Specialist Physician (Clinical Laboratory)
 - 1974-1975:** One year postdoctoral work with Professor Dennis Chapman, 3 months at University of Sheffield and 9 months at Chelsea College, University of London, UK
 - Feb. (1-29) 1984:** Course of Medical Bacteriology, UMP Cluj - Napoca
 - Nov. (1-30) 1993:** Course of Medical Informatics, "Iuliu Hațieganu" UMP Cluj – Napoca
 - 1997:** accredited as Senior Physician ("Medic primar", the highest professional qualification of physicians in Romania) in Medical Genetics and Genetic Pathology

III. SCIENTIFIC TITLES (HONORS)

- 1973:** Ph.D. (Medical Biochemistry), UMP Cluj
- 1993:** elected as Full Member of the Academy of Medical Sciences of Romania
- 2001:** elected as Corresponding Member, **2015** Full Member of the Romanian Academy
- 2003:** DOCTOR HONORIS CAUSA "Vasile Goldis" Western University, Arad, Romania
- 2004:** DOCTOR HONORIS CAUSA "Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania (the first Romanian awarded with the title)
- 2004:** DOCTOR HONORIS CAUSA "Grigore T. Popa" University of Medicine and Pharmacy, Iassy, Romania
- 2004:** DOCTOR HONORIS CAUSA "Victor Babes" University of Medicine and Pharmacy, Timisoara, Romania

2004: HONORARY PROFESSOR University of Medicine and Pharmacy, Tg. Mures, Romania
2006: DOCTOR HONORIS CAUSA, University of Medicine and Pharmacy, Craiova, Romania
2010: DOCTOR HONORIS CAUSA, University of Oradea, Romania

IV. POSITIONS

1. Professional positions:

1966-1969: Rotating Intern in Laboratory Specialties (one year in each of Clinical Laboratory, Microbiology, Biochemistry);

1969-1972: Ph.D. Student in Medical Biochemistry (Professor Ion Manta, Dept. Biochem., UMP Cluj)

1972-1978: Lecturer, **1978:** Senior Lecturer, Department of Biochemistry, UMP Cluj-Napoca;

1978: founder of the new Discipline of Cell Biology (to become Cell and Molecular Biology), UMP Cluj-Napoca;

1978: founder of the new Center of Human Genetics (to become in 2007 First Laboratory of Genetic Explorations), Cluj County Clinical Emergency Hospital, Cluj-Napoca, Romania; in 2013 the laboratory was accredited as a unit of the research platform of the Academy of Medical Sciences of Romania and in 2014 the laboratory received the Aegis of The Romanian Academy;

1978-1991: Senior Lecturer; **1990:** Reader; **1991 - 2009:** Professor and Chairman of the Discipline of Cell and Molecular Biology, UMP Cluj-Napoca, Romania;

1978 – present: Chief/Coordinator of the Center of Human Genetics (to become Laboratory of Human Genetics and, in 2007, First Laboratory of Genetic Explorations), Cluj County Clinical Emergency Hospital, Cluj-Napoca, Romania; in 2013 the laboratory was accredited as a unit of the research platform of the Academy of Medical Sciences of Romania and in 2014 the laboratory received the Aegis of The Romanian Academy;

1998 - 2011: Director, Center of Excellence of Molecular Medicine and Neurosciences, UMP Cluj-Napoca;

2010 - present: Professor of Cell and Molecular Biology, “Vasile Goldiș” Western University Arad, Romania;

2003 - 2014: Honorary Associate; **2014 - present:** Honorary Professor, School of Molecular Biosciences, University of Sydney.

2. Managerial (administrative and scientific) positions:

- Chairman of the Discipline of Cell and Molecular Biology, UMP "Iuliu Hațieganu" Cluj-Napoca (since its foundation (**1978**) until 30 Sep. **2009**);

- Director, Department of Biology and Molecular Medicine (since its foundation in **2007**-Sep 30, 2009), UMP Cluj-Napoca, Romania;

-**1982 – 2009:** Chief, Laboratory of Electron Microscopy, UMP Cluj-Napoca, Romania

1978 – present: Chief/Coordinator of the Center of Human Genetics, which became Laboratory of Human Genetics, later The First Laboratory of Genetic Explorations, Cluj County Clinical Emergency Hospital, Cluj-Napoca;

- Member of the Council of the Faculty of Medicine (**1990 -1992**), of the Senate of UMP (**1990 -1992; 2004 - 2009**); member of several Commissions of UMP, of the Scientific Council, of the Council of Doctoral School of UMP Cluj-Napoca, Romania (**1990 – 2006**);

- Member of the Commission of Medical Sciences of the National Council of Higher Scientific Research of Romania (CNCSIS) (**1995 - 2005**);

- Director of the Sub-program of Molecular and Cellular Medicine of the VIASAN (Life and Health) Program of the Ministry of Education and Teaching (**2001-2004**);

- President of the Comision of Laboratory Medicine of the Ministry of Health (**2005 -2007**);

- Director, Center of Excellence of Molecular Medicine (in 2006 became Center of Excellence of Molecular Medicine and Neurosciences), UMP Cluj-Napoca, accredited by CNCSIS;

- Member in the National Council for the Accreditation of University Titles, Diplomas and Certificates Romania (2006 - 2010);
- **2015 - present:** Member in the Director College of the National Authority of Management of Quality in Health of the Ministry of Health (representing Romanian Academy).

3. In scientific societies:

- 1971 - 1982: Secretary of the Cluj-Napoca Biochemistry Section of The Union of Medical Sciences
- 1972 - 1989: Member in the Subcommission of Biochemistry, Cluj Section of Romanian Academy
- Romanian Society for Cellular Biology: President of Cluj-Napoca Section (from its founding in 1981 - 2007); Vice-President of the Romanian Society for Cellular Biology (1981 – present):
- 1995 - 2006: Founding Member and Vice-President of the Romanian Society for Medical Genetics
- 2004 - 2014: Romanian Society of Normal and Pathological Morphology;
- 1996-1999: Member of the Steering Committee "European Union Action for Cystic Fibrosis Research and Therapy"
- 2000 - 2008: Member of the European Union Network on Cystic Fibrosis
- 2002 (July): Member of the UNESCO Expert Panel in Medical Genetics assembled in Rome
- 1995 - 2005: Expert Member of the Commission of Medicine, National Council for Higher Education Scientific Research, Ministry of Education and Research of Romania
- 2001 - 2004: Director of the Sub-Programme on Molecular and Cellular Medicine of the Romanian National Program of Medical Research VIASAN (Viața și Sănătatea - Life and Health)
- 2005 - 2007: President, Commission of Laboratory Medicine of the Ministry of Health of Romania
- 2006 – 2008; 2012 - present: Member, Bureau of the Section of Medical Sciences of The Romanian Academy
- 2004 – 2009: President, Romanian Society of Laboratory Medicine (RSLM); 2010 – 2013: Past President of RSLM; 2013 – 2015: Member in the Board of RSLM; 2006 – 2009: representative of RSLM in Balkan Clinical Laboratory Federation (BCLF); 2009 – 2013: representative of RSLM in European Federation of Clinical Chemistry and Laboratory Medicine (EFLM);
- 2009 – 2011: President of Balkan Clinical Laboratory Federation (BCLF); 2012 – 2014: Past President al BCLF; 2006 - present: Member, BCLF Executive Board;
- 2007 – present: President, Cluj Branch of the Romanian Committee for the History and Philosophy of Science of the Romanian Academy;
- 1987 – present: Life Member of The American Association for the Promotion of Science
- Member of other scientific societies: European Society of Human Genetics; European Life Sciences Organization (ELSO);

V. INTERNATIONAL ACADEMIC (RESEARCH) VISITS

- a. Sep. 1974-sep. 1975:* “Welcome Trust Post-doctoral Fellow” (in the laboratory of Prof. Dennis Chapman (3 months at the Dept. of Chemistry, Univ. din Sheffield and 9 months at the Dept. of Chemistry, Chelsea College, Univ. of London), UK;
- b. June-Sep. 1977:* “Visiting Researcher”, Dept of Biochemistry, Chelsea College, Univ. of London, UK;
- c. July-Aug. 1980:* “Visiting Lecturer” (and research visit) at several laboratories where I was invited to lecture: Burnsides Laboratory (Univ. Illinois, Urbana-Champaign, invited by Prof. Fred.A. Kummerow to start a collaborative project), Univ. of Madison (Wisconsin), Columbus Univ. (Ohio), Univ. of Chicago Medical School, Albert Einstein Univ. (New York City), Univ. Farmington (Connecticut), Boston Biomedical Research Institute (Michigan), Laboratory of Cell Biology, Rockefeller Univ. (New York City, invited by Prof. Günter Blobel, Nobel Laureate 1999), Yale Univ. Medical School (Section of Cell Biology chaired by George Emil Palade, who appreciated my efforts to organize the new Discipline of Cell Biology at UMP Cluj-Napoca, as well as my independent research programs).
- d. Aug. 1981 (two weeks):* Visiting Scientist, Lab. of Biochemical Genetics, Childrens Hospital, Utrecht, The Netherlands;

- e. July-Sep. 1983:* “Visiting Professor”, Burnsidess Laboratory (Univ. Illinois, Urbana-Champaign), USA;
- f. Sep.-Oct. 1984:* “Visiting Researcher”, Dept. of Biochemistry, Chelsea College, Univ. of London, UK;
- g. Oct.-Dec. 1991:* “Visiting Investigator”, Dept. of Biochemistry, Univ. of Sydney, Australia, with a grant from The International Union of Biochemistry, to study the water permeability of marsupial erythrocytes;
- h. 1992 (two weeks):* Visitor to Facultés Universitaires Notre Dame de la Paix, Namur, Belgium under a TEMPUS Programme (of The European Union);
- i;j. Sep.-Dec. 1992 și Aug.-Oct.1993:* Visiting Research Professor, King’s College London, U.K., to study the molecular mechanisms of water transport on purified water channel protein reconstituted in liposomes (Wellcome Trust Grant);
- k. March-May 1992:* Laboratory of Molecular Genetics (Prof. M. Goossens), “Henri Mondor” Hospital, Créteil - Paris, studying the techniques for analyses of mutations in the cystic fibrosis gene;
- l. July-Oct. 1994:* “Visiting Professor”, Department of Protein and Molecular Biology, Royal Free Hospital School of Medicine, London, performing molecular studies on the structure-function relationships of the water channel protein from the human erythrocyte membrane by Fourier-transform infrared spectroscopy (Wellcome Trust Grant);
- m. Sep. 1999-Apr. 2000:* “Visiting Professor” (Senior Invitation Fellowship, Japan Society for the Promotion of Science), Institute of Applied Biochemistry, Mitake, Gifu, Japan, performing research on human melanoma cells transfected with plasmids having the gene for β interferon;
- n-o.1995, 1998, 2001, 2002 (1-3 months each year):* “Visiting Professor” Dept. of Biochemistry, Univ. of Sydney, Australia, completing the research on water permeability of various animal species (Australian or introduced from Europe).
- p. Jan.-June 2005:* “Visiting Professor”, Department of Biochemistry, Graduate School of Medicine, Osaka University, Japan.

VI. RECOGNITION IN ROMANIA AND ABROAD

1. Romanian Prizes and Awards

1950-61: First prize in each grade of School, with Diploma for Special Merits

1959-61: Prizes in the Mathematics Olympics for School Students at the local, regional and national level

1961: Diploma for exceptional results in professional activities at graduation of Lycée (at the top of the year)

1964: Special Fellowship for Outstanding Students during medical studies

1964-1967: Several prizes at local and national Scientific Sessions of Student Research

1984: “Emil Racoviță” Prize of the Academy of Romania for “The work in the field of Membrane Molecular Biology with Medical Applications”

1994: "Iuliu Moldovan" Prize of The “Iuliu Hațieganu” Univ. of Medicine and Pharmacy Cluj-Napoca for “Special Merits in Teaching and Research”

1994: Diploma of The “Iuliu Hațieganu” Univ. of Medicine and Pharmacy Cluj-Napoca for “Special contributions to the Development of the Cluj School of Medicine and Pharmacy”

1994: Medal of The “Iuliu Hațieganu” Univ. of Medicine and Pharmacy Cluj-Napoca “75 years of Romanian Medical and Pharmaceutical Higher Education in Transylvania”

1999: Diploma “80 years of Romanian Medical and Pharmaceutical Higher Education in Transylvania” of The “Iuliu Hațieganu” Univ. of Medicine and Pharmacy Cluj-Napoca for “Special Merits in the Development of the Romanian School of Medicine and Pharmacy”

2002: Lions Club of Cluj-Napoca “Certificate of Appreciation for “Invaluable Services Rendered for Medicine”

2002: “Grigore T. Popa” Medal of the University of Medicine and Pharmacy Iassy, Romania

- 2003: OPERA OMNIA Prize of the National Council for Higher Education Scientific Research for “Excellence in Scientific Research”
- 2003: “Prize for Science” of Cluj Prefecture and County Council
- 2003: Great Prize “Iuliu Hatieganu” of the “Iuliu Hatieganu” University of Medicine and Pharmacy Cluj-Napoca for “Contributions to the Discovery of Aquaporins”
- 2003: Prize “Man of the Year 2003” of the daily newspaper Adevărul de Cluj for “The World Priority in the Discovery of the First Water Channel Protein in the Human Red Blood Cell Membrane”
- 2003: Prize “Laurels of Sciences” of Radio Romania
- 2003: “Prize for Science” of Cluj mass-media
- 2004: Citizen of Honor of Cluj-Napoca Municipium “to recognize the remarkable activity in higher education and for the outstanding contribution in cell and molecular biology research lead that has to the increase in the prestige of Cluj scientific school at the national and international level”
- 2004: Diploma of Honor of the Romanian Association of Anaesthesiology
- 2004: Diploma of Honor of the Senate of the “Iuliu Hatieganu” University of Medicine and Pharmacy Cluj-Napoca “In Appreciation and Gratitude, on 60th Birthday, for the Whole Activity Dedicated to the Glory of Romanian Science”
- 2004: Diploma of Excellence of The Academy of Scientists from Romania for “The Discovery of the First Water Channel Protein (Aquaporin 1) in the Human Red Blood Cell”
- 2004: Great Prize “Iuliu Hatieganu” of the “Iuliu Hatieganu” University of Medicine and Pharmacy Cluj-Napoca for “The Whole Activity (Research and Teaching)”
- 2005: “Diploma of Excellence” for 2004 awarded by the Romanian medical press
- 2006: Gold Medal of The Academy of Scientists from Romania for “The Discovery of the First Water Channel Protein (Aquaporin 1) in the Human Red Blood Cell”
- 2009: Title of “Senior of Citadel” (“Senior al Cetății”) Cluj-Napoca
- 2009: “Prize of Excellence” of the newspaper “Viața Medicală” (“Medical Life”) Bucharest
- 2011: “Diploma of Excellence” awarded by The Romanian Society of Laboratory Medicine (RSLM) for “Special merits in developing the specialty of Laboratory Medicine and implication in the activity of RSLM
- 2011: “Diploma of Excellence” awarded by The Romanian Society of Laboratory Medicine and Univ. of Oradea/High Performance Medical Research Center “for the great contribution to The 18th National Congress of Laboratory Medicine and The 3rd Danubian Symposium of Laboratory Medicine (May 2011, Sibiu, Romania)
- 2012: The Great Prize of The Ambassador Media Trust (February, Tg. Mures)
` on the occasion of 95th anniversary of the Great Union from December 1, 1918 (formation of the Great Romania)
- 2013: Academic Prize of The „Vasile Goldiș” Western University, Arad (Faculty of Medicine, Pharmacy and Dental Medicine) for the article with the highest impact factor published in 2013.
- 2014: Diploma ACADEMIC MERIT, handed by Academician Ionel-Valentin Vlad, President of the Romanian Academy, on the occasion of "Cluj Academic Days"
 - 2015: Ordinul „Steaua României”, degree of chevalier, awarded and handed by Klaus Werner Iohannis, President of Romania, on December 1 (National Day of Romania)
 - 2016: "Prize for the whole activity", awarded at "Medical Cluj Elites" Gala, proposed by the students of UMP “Iuliu Hațieganu” Cluj-Napoca

2. International Awards and Recognition

- 1984: Active Member of The New York Academy of Science, awarded without payment, in recognition of the volume 414 of Annals of N.Y Acad. Sci., BIOMEMBRANES AND CELL FUNCTION, F.A. Kummerow, Gh. Benga, R.P. Holmes (Eds.), the most successful of all volumes published in 1983.
- 1987: Laureate of “The Annual Prize for Scientific Research” awarded by The Balkan Medical Union
- 1987: Medal 50th Anniversary of the Balkan Medical Union Bucharest, Romania

2000: “K. Miras Award” of The Balkan Clinical Laboratory Federation

2003: “Honor Member Award” of The Romanian Medical Society in New York, “In Appreciation and Recognition of His Achievements in the Field of Medical Biology Sciences”

2009 – 2011: President of Balkan Clinical Laboratory Federation (BCLF)

Guest Editor, Special Issue of Molecular Aspects of Medicine on “Water Channel Proteins (aquaporins and relatives), 2012, issues 5-6.

3. Member of the Editorial Board of International (and Romanian) Journals:

1999 – present: Founding Editor and Editor-in-Chief, “Bulletin of Molecular Medicine”

For several years: “Studii și cercetări de biochimie”, “Revue roumaine de Biochimie”, “Romanian Journal of Biophysics”, “Clujul Medical” (1994-1996, Vice-Editor), “Fiziologia (Physiology)”, “Jurnal Medical Arădean”, “Timișoara Medical Journal”, “Palestrica Mileniului Trei”, “Journal of Blood Medicine”

2000 – 2008: “Journal of Cellular and Molecular Medicine”

2003 – present: “Romanian Journal of Physiology”

2005 – present: “Journal of Medical Biochemistry” (formerly “Jugoslovenska Medicinska Biohemija”)

2012 – present: “Balkan Medical Journal”

2013 – present: “Medicina moderna”

2013 – present: “OLTENIA - STUDII SI COMUNICARI STIINTELE NATURII (*Oltenia for Studies in natural Sciences*)

4. Reviewer of manuscripts

1977- present: reviewer of manuscripts for international journals (Cellular and Molecular Biology, Biochimica et Biophysica Acta, Journal of Cellular and Molecular Medicine, European Journal of Biophysics, Biophysical Journal, Balkan Medical Journal) and of Romanian journals.

5. Reviewer of grant proposals

1977- present: reviewer of grant proposals for National Science Foundation USA), Gordon Conferences (USA), for NATO grants, for grants of The National Council for Higher Education Scientific Research (CNCSIS, Romania) etc.

VII. SPECIAL SCIENTIFIC ACTIVITIES

1. Founding laboratories and centers for teaching, research and laboratory genetic testing (see on the site point 3 of the left Menu):

I founded in the Discipline of Cell Biology (to become the Department of Cell and Molecular Biology), I developed the Laboratory of Electron Microscopy of The “Iuliu Hațieganu” University of Medicine and Pharmacy Cluj-Napoca, I also founded The Center of Human Genetics (to become in 2007 The First Laboratory of Genetic Explorations) of Cluj County Clinical Emergency Hospital.

a. Founding the Discipline of Cell and Molecular Biology, “Iuliu Hațieganu” University of Medicine and Pharmacy Cluj-Napoca

b. Founding the Laboratory of Human Genetics, Cluj County Clinical Emergency Hospital

c. Founding the Center of Molecular Medicine, UMP Cluj-Napoca

2. Grants obtained as Principal Investigator

1978 - present: Several grants from the Academy of Medical Sciences and the National Council for Science and Technology of Romania

1981; 1984; 1987: Grants from The Wellcome Trust (U.K.) for a co-operative Research Program with Chelsea (King's) College, University of London on "MEMBRANE STUDIES WITH MEDICAL APPLICATIONS"

1983-1986: Grant from the National Science Foundation (USA) for a Co-operative Research Program with Burnside's Research Laboratory, Univ. of Illinois, Urbana-Champaign

1992-93: Grant from The Wellcome Trust (U.K.) to perform a research program at King's College, Univ. of London, U.K.

1994: Grant from The Wellcome Trust (U.K.) to perform a research program at Royal Free Hospital School of Medicine, Univ. of London, U.K.

1995: Grant of the Academy of Romania

1995-96: Grant of the Ministry of Teaching of Romania

1998-2001: Grant of The National Council for Education Scientific Research (NCHES) for a Major Research Program on "Molecular Basis, Physiological Significance and Pathologic Implications of Water Permeability of Red Blood Cell Membrane" (150.000 USD)

2000-2002: Grant of The National Council for Higher Education Scientific Research (NCHES) for a "Post-Graduate Program in the Field of Molecular Medicine and Neurosciences" (205.000 USD)

2004: Grant of The National Council for Higher Education Scientific Research (NCHES) for equipment

2006- 2008: Grants from NCHES and from the Romanian National Program of Medical Research VIASAN (Viața și Sănătatea - Life and Health) of Romania

4. Invited Lectures

1980; 1983; 1985; 1988; 1990; 1991; 1992; 1995; 1997, 1998, 2000 – 2013: at dozens of laboratories in Europe, USA, Australasia; selected examples below.

Europe: King's College University of London (several times), University of Oxford, University of Edinburgh, University of Newcastle, University of Amsterdam, University of Utrecht, Université Libre de Bruxelles, Facultés Universitaires de Namur, Max Planck Institut Frankfurt/Main, University of Köln, University of Leipzig, University of Hannover, ETH Zürich, University of Bologna, University of Prague, University of Belgrade, Nencki Institute Warsaw, University of Milan, Romanian Universities (Cluj-Napoca, Bucharest, Timișoara, Iassy, Arad, Tg.Mureș, Craiova, Constanța) etc;

USA: The Rockefeller University New York (several times, invited by Günter Blobel, Nobel Prize laureat, 1999 for physiology or medicine), Columbia University New York (twice), Mount Sinai School of Medicine New York, New York University Medical Center, Yale University New Haven, Harvard Medical School (twice), University of Chicago, North Western University Evanston IL, University of Illinois Urbana – Champaign (three times), University of Farmington CN (three times), University of Wisconsin Madison, Michigan Molecular Institute, University of Ohio Columbus, Medical College of Minnesota Minneapolis, Research Triangle Park North Carolina, University of Utah Salt Lake City, University of California Berkeley, University of California San Francisco, Baylor College of Medicine Houston (twice), Purdue University Lafayette IN (twice), University of Virginia Charlottesville, Wright State University Dayton OH, Bowman Gray School of Medicine Winston Salem NC, Louisiana School of Medicine Shreveport etc

Australasia: University of Sydney, Howard Florey Institute of Medical Research Melbourne, University of Osaka, Institute of Applied Biochemistry Mitake Gifu, Keio University Tokyo, Juntendo University Tokyo, University of Kobe, Tokyo Medical and Dental University, Hokkaido University Sapporo, University Fukui, Osaka Bioscience Institute and others.

5. Special Invited Seminars:

- 2002: "The Birth of Aquaporin", Wayne State University, School of Medicine, Detroit, USA

- 2003: “From the Discovery of the First Red Blood Cells Water Channel Protein in Cluj-Napoca, Romania in 1995 to the 2003 Nobel Prize in Chemistry”, The Rockefeller University (NY) and Farmington (CT), USA

6. Participation with papers at national and international scientific events (selection)

6.1. Honorary President and Plenary Lecturer

- The 9th WORLD MULTI-CONFERENCE ON SYSTEMICS, CYBERNETICS AND INFORMATICS (Orlando, Florida, USA, July 10 – 13, 2005)

6.2. Plenary Lecturer

- 2001: 13th Meeting of the Eur. Assoc. for Red Cell Res., Barcelona, Spain
- 2004: 12th Meeting of Balkan Clinical Laboratory Federation (Neptun, Romania, September 15 - 17)
- 2004: 28^{eme} Semaine de l'Union Medicale Balkanique et 7eme Congres de l'Entente Medicale Mediteranne (Oradea, Romania, September 16 - 19)
- 2004: 3rd Congress of The Academy of Scientists from Romania (Constantza, Romania, June 1-4)
- 2004: 9th National Congress of The Romanian Society of Physiological Sciences (Timisoara, Romania, June 3-5)
- 2004: 3rd National Congress of the Romanian Federation of Diabetes, Nutrition and Metabolic Diseases (Arad, Romania, November 10 - 12)
- 2004: Symposium of the Romanian Society of Laboratory Medicine (Cluj -Napoca, Romania, November, 18 – 21)
- 2005: 8th Iranian Congress of Biochemistry & 1st International Congress of Biochemistry and Molecular Biology (Tehran, Iran, September 11 – 15)
- 2005: National Conference of the Romanian Society of Laboratory Medicine (Arad, Romania, September 22-24)
- 2004: “Victor Babeş Colloquium”, National and Kapodistrian University (Athens, Greece, December 17)
- 2005: First Comemorative Symposium “Acad. Nicolae Cajal” (Bucharest, Romania, March 29-30)
- 2005: Key Plenary Lecturer, 6th International Congress for Medical Students and Young Doctors “Medicalis 2005” (Cluj-Napoca, Romania, November 2 – 5)
- 2006: International Congress of Students in Medicine (Novi Sad, Serbia, July 25 - 27)
- 2006: International Conference of Gerontology (Arad, Romania, September 15 – 16)
- 2007: International Conference MEMODIC (Tg. Mures, Romania, April 12 – 14)
- 2007: 25th Annual Session of the Romanian Society of Cell Biology (Bucharest, Romania, June 7 – 9)
- 2007: 16th Meeting of the European Association for Red Cell Research (Oxford, U.K., March 16 – 18)
- 2007: 3rd Int. Symposium “Acad. Nicolae Cajal” (Bucharest, Romania, March 29 - 30)
- 2007: Conference of the Association of Medical Laboratories of Romania (Iassy, Romania, July 5-7)
- 2008: 4th European Federation of Clinical Chemistry and Laboratory Medicine (EFCC) Symposium for Balkan region (Belgrade, Serbia, June 17 – 21)
- 2008: Workshop “Clinical Applications of Recent Knowledge in Neurosciences” (Cluj-Napoca, Romania, October 8 – 10)
- 2008: 16th Meeting of Balkan Clinical Laboratory Federation (Athens, Greece, October 16 – 19)
- 2009: 17th Meeting of Balkan Clinical Laboratory Federation (Ohrid, Macedonia, September 16 – 19)
- 2010: 17th Congress of the Romanian Society of Laboratory Medicine, (Tg. Jiu, Romania, September 8-11)
- 2010: 18th Meeting of Balkan Clinical Laboratory Federation (Tirana, Albania, September 22-25)
- 2010: First Symposium of Medical Biochemistry and Molecular Medicine with International Participation (Iassy, Romania, October 7-9)

- 2011: 3rd Int. Congress of the Romanian Society of Cell Biology (Arad, Romania, and Szeged, Hungary, June 8-12)
- 2011: Symposium “Laboratory Management in Europe” (Paris, France, April 8-9)
- 2011: 9th Balkan Congress of Medical Genetics (Timișoara, Romania, September 15 – 17)
- 2011: “Festschrift Symposium for Professor Philip Kuchel” (Sydney, Australia, September 30)
- 2012: Workshop: "Future Horizons in Brain Therapies" (Cluj-Napoca, Romania, November 1-2)
- 2012: Anniversary Symposium „Centenary of George Emil Palade – Nobel Prize Laureate”, Academy of Medical Sciences (București, Romania, November 9)

6.3. Invited speaker

- 1986: 2nd European Congress of Cell Biology (Budapest) and lecturer at the Biological Research Center Szeged (Hungary)
- 1988: International Congress of Biochemistry and the Satellite Symposium on BIOMEMBRANES AND DISEASES (Prague - Czechoslovakia).
- 1989: Invited speaker at 4 International Symposia: Turku - Finland, Berlin - Germany, Bucharest and Târgu-Mureș, Romania
- 1991: Overseas invited speaker and representative of the American Association for the Advancement of Science at the Annual Meeting of the Australian Biophysics Society, Sydney, Australia
- 1994: Symposium of Membrane Transport European Cell Biol. Congress, Prague, The Czech Republic
- 1995: Symposium “Looking in cells with NMR” 7th Int. Congress of the Federation of Asian and Oceanian Biochemists and Molecular Biologists, Sydney, 25-29 sep.
- 2002: Oral communication, 15th International Congress on Electron Microscopy, Durban, South Africa
- 2002: Symposium on Aquaporins in the COMBIO 2002 Meeting, Sydney, Australia
- 2002: 6th Int. Cystic Fibrosis Symposium, Dubrovnik, Croatia (November 1)
- 2003: 7th Int. Cystic Fibrosis Symposium, Bratislava, Slovakia
- 2004: Minisymposium: “Discovery of aquaporins”, at The 22nd Annual Scientific Session of The Romanian Society of Cell Biology (Sighisoara, Romania, June 10-13)
- 2004: Days of Cluj Branch of Romanian Academy (Cluj-Napoca, Romania, May 24 – June 12)
- 2004: Bioinformatics and Genome Based Medicine (Cluj-Napoca, Romania, June 27 – July 7)
- 2004: Advanced Spectroscopies on Biomedical and Nanostructured Systems (Cluj-Napoca, Romania, September 19-22)
- 2004: 6th Symposium on Metal Elements in Environment, Medicine and Biology (Timisoara, Romania, November 8 – 10)
- 2005: Invited Session “Water Channel Proteins: from their Discovery in 1985 in Romania to the 2003 Nobel Prize in Chemistry” at The 9th WORLD MULTI-CONFERENCE ON SYSTEMICS, CYBERNETICS AND INFORMATICS (Orlando, Florida, USA, July 10 – 13)
- 2005: Romanian International Conference of Chemistry and Chemical Engineering, RICCCE XIV, (Bucharest, Romania, September 22- 24)
- 2005: Symposium “Water Channel Proteins: from their Discovery to the Physiopathology and Clinic” at The 4th WORLD CONGRESS OF CELLULAR AND MOLECULAR BIOLOGY (Poitiers, France, October 7 – 12)
- 2008: EHRLICH II, 2nd World Conference on Magic Bullets (Nürnberg, Germany, October 3-5)
- 2009: 2nd Joint Congress of the Global College of Neuroprotection & Neuroregeneration and of the Society for the Study of Neuroprotection and Neuroplasticity (Vienna, Austria, March 1-4)
- 2009: 17th International Symposium of The European Association for Red Cell Research (Triuggio, Milano, Italy, April 23-27)
- 2009: Symposium on “Genetic Disorders of Body Fluid Homeostasis”, Euromedlab 2009 (18th EFCC European Congress of Clinical Chemistry and Laboratory Medicine, Innsbruck, Austria, June 4-6)
- 2011: Symposium “Laboratory Management in Europe” (Paris, France, April 8-9)

7. Organizator principal de manifestări științifice naționale și internaționale

Am fost **organizator principal** al următoarelor manifestări științifice naționale sau cu participare internațională (și **Speaker**, la unele manifestări):

7. Main Organizer (and Lecturer) of National and International Scientific Events

1979 - 1984: Secretary of the Series of Lectures "Modern Methods and Techniques in Medical Research" presented every month by Faculty Members of "Iuliu Hațieganu" UMP Cluj-Napoca

1980: Chairman (and Lecturer) of a Session on Membrane Transport at the Frankfurt/Main Membrane Symposium (satellite to the 2nd International Congress of Cell Biology, Berlin, Fed. Rep. Germany)

1980, October 2-4: Romanian-British Workshop "Membrane Processes: Molecular Biological Aspects and Medical Applications" (and Lecturer), Cluj-Napoca

1981, May 19-24: Romanian-American Workshop (Cluj-Napoca), continued in 1982, August 4-6 (New York) "The Role of Biomembranes in the Integrity and Function of Cells" (and Lecturer)

1986 (June): FEBS Course "BIOMEMBRANES AND DISEASES", Cluj-Napoca (and Lecturer)

1986 (June): Co-chairman (and Lecturer) of the IUB Symposium "MEMBRANE LIPIDS AND PROTEINS IN TRANSPORT AND ASSEMBLY PHENOMENA, Cluj-Napoca

1988: Co-Chairman (and Lecturer) of a Symposium on Membranes and Transport in the International Congress of Cell Biology (Montreal - Canada)

1999 (July 19 - 30): the ICRO (International Cell Research Organization)/UNESCO Training Course on BIOMEMBRANES AND MOLECULAR MEDICINE, Cluj-Napoca (and Lecturer)

2001: 1st CLUJ-NAPOCA INTERNATIONAL SYMPOSIUM OF MOLECULAR MEDICINE, SOCIETY AND PUBLIC HEALTH on: Air Pollution at Low Altitude and Cystic Fibrosis, Nov. 17-18 (and Lecturer)

2002: 2nd CLUJ-NAPOCA INTERNATIONAL SYMPOSIUM OF MOLECULAR MEDICINE, SOCIETY AND PUBLIC HEALTH on: Health Effects of Combustion Products from Natural Gas with Reference to "Appartment" Heating Appliances Installed in Building Blocks from Romania, February 9, Cluj-Napoca (and Lecturer)

2002: 3rd CLUJ-NAPOCA INTERNATIONAL SYMPOSIUM OF MOLECULAR MEDICINE, SOCIETY AND PUBLIC HEALTH on: Molecular Genetics, March 16 (and Lecturer)

2002: 4th CLUJ-NAPOCA INTERNATIONAL SYMPOSIUM OF MOLECULAR MEDICINE, SOCIETY AND PUBLIC HEALTH on: Recent Progress In Pancreatology, December 5 (and Lecturer)

2003: 5th CLUJ-NAPOCA INTERNATIONAL SYMPOSIUM OF MOLECULAR MEDICINE, SOCIETY AND PUBLIC HEALTH on: NMR Spectroscopy - Principles and Biomedical Applications, March 11, (and Lecturer)

2003: 6th CLUJ-NAPOCA INTERNATIONAL SYMPOSIUM OF MOLECULAR MEDICINE, SOCIETY AND PUBLIC HEALTH on Glycobiology: from Basic Aspects to Clinical Applications, April 8, (and Lecturer)

2003: 7th CLUJ-NAPOCA INTERNATIONAL SYMPOSIUM OF MOLECULAR MEDICINE, SOCIETY AND PUBLIC HEALTH on: Landmarks in Transport Across Cell Membrane: a Symposium in the Honor of Nobel Laureates George Emil Palade and Günter Blobel, May 27, (and Lecturer)

2003: 8th CLUJ-NAPOCA INTERNATIONAL SYMPOSIUM OF MOLECULAR MEDICINE, SOCIETY AND PUBLIC HEALTH on: Neuroimmunomodulation – a Symposium dedicated to the pioneers of the field: Ion Baciú and Novera Herbert Spector, August 4, (and Lecturer)

2004: 9th CLUJ-NAPOCA INTERNATIONAL SYMPOSIUM OF MOLECULAR MEDICINE, SOCIETY AND PUBLIC HEALTH, Celebrating the 150th Anniversary of the Birth of VICTOR BABEȘ, the 25th Anniversary of the Department of Cell and Molecular Biology of the "Iuliu Hațieganu" University of Medicine and Pharmacy and of the Laboratory of Human Genetics of Cluj County University Hospital and the 60th Birthday of Professor GHEORGHE BENGA, April 23 – 24, (and Lecturer)

2004: 10th CLUJ-NAPOCA INTERNATIONAL SYMPOSIUM OF MOLECULAR MEDICINE, SOCIETY AND PUBLIC HEALTH, Celebrating Professor CLAUDE MATASA, DCE, DSc, DHC, (SUA), May 24, (and Lecturer)

2004: Minisymposium: “Discovery of aquaporins”, at The 22nd Annual Scientific Session of The Romanian Society of Cell Biology, Sighisoara, Romania, June 10-13, (and Lecturer)

2004: 11th CLUJ-NAPOCA INTERNATIONAL SYMPOSIUM OF MOLECULAR MEDICINE, SOCIETY AND PUBLIC HEALTH and The 1st OUTNOBEL SYMPOSIUM, December 10, (and Lecturer)

2005: Chairman (and Lecturer), Invited Session “Water Channel Proteins: From their Discovery in 1985 in Romania to the 2003 Nobel Prize in Chemistry” at The 9th WORLD MULTI-CONFERENCE ON SYSTEMICS, CYBERNETICS AND INFORMATICS, Orlando, Florida, USA, July 11

2005: 12th CLUJ-NAPOCA INTERNATIONAL SYMPOSIUM OF MOLECULAR MEDICINE, SOCIETY AND PUBLIC HEALTH on “Structure Physiology”, celebrating Professor YOSHINORI FUJIYOSHI (Japan), October 5

2005: Chairman (and Lecturer), Symposium “Water channel proteins: from their discovery to the physiopathology and clinic” at The 4th WORLD CONGRESS OF CELLULAR AND MOLECULAR BIOLOGY (Poitiers, France, October 7 – 12)

2005: 13th CLUJ-NAPOCA INTERNATIONAL SYMPOSIUM OF MOLECULAR MEDICINE, SOCIETY AND PUBLIC HEALTH and The 2nd OUTNOBEL SYMPOSIUM, December 9, (and Lecturer)

2006: 14th CLUJ-NAPOCA INTERNATIONAL SYMPOSIUM OF MOLECULAR MEDICINE, SOCIETY AND PUBLIC HEALTH celebrating Professors Nobuyoshi Shimizu and Yoshiko Shimizu , (Japan) June 1st

2007: 15th CLUJ-NAPOCA INTERNATIONAL SYMPOSIUM OF MOLECULAR MEDICINE, SOCIETY AND PUBLIC HEALTH and The 3rd OUTNOBEL SYMPOSIUM, December 7

2008: 16th CLUJ-NAPOCA INTERNATIONAL SYMPOSIUM OF MOLECULAR MEDICINE, SOCIETY AND PUBLIC HEALTH on “Contributions of Cluj Scientists to Clinical Biochemistry and Cell Biology”, dedicated to Prof. Dr. Dhc. Mircea Cucuianu (80 years old) and Prof. Dr. Dhc. Constantin Crăciun (70 years old) and The 4th OUTNOBEL SYMPOSIUM, December 5

2009: 17th CLUJ-NAPOCA INTERNATIONAL SYMPOSIUM OF MOLECULAR MEDICINE, SOCIETY AND PUBLIC HEALTH: “30 years since the Foundation of the Chair of Cell and Molecular Biology of the “Iuliu Hațieganu” University of Medicine and Pharmacy Cluj-Napoca, and of the Laboratory of Human Genetics of Cluj County Hospital, as part of the anniversary of 90 years since the Foundation of the Faculty of Medicine at the University of “Dacia Superior” Cluj”, June 4 (and Lecturer)

- June 4, 2009: 17th Cluj-Napoca International Symposium Of Molecular Medicine, Society And Public Health: 30 years since the Foundation of the Chair of Cell and Molecular Biology of the “Iuliu Hațieganu” University of Medicine and Pharmacy Cluj-Napoca, and of the Laboratory of Human Genetics of Cluj County Hospital, as part of the anniversary of 90 years since the Foundation of the Faculty of Medicine at the University of “Dacia Superior” Cluj (Cluj-Napoca, Romania) (and Plenary Speaker);

- **September 21 – 23, 2011: 19th Meeting of the Balkan Clinical Laboratory Federation (BCLF 2011) (Bucharest, Romania) (and Plenary Speaker);**

- **October 27-29, 2011: The First World Congress on Water Channel Proteins (Aquaporins and Relatives) Celebrating the 25th Anniversary of the Discovery of the First Water Channel Protein (Later Called Aquaporin 1), Cluj-Napoca, Romania (and Plenary Lecturer and Key-Note Speaker)**

8. Founding a school of cell biology and molecular medicine in Cluj – Napoca

Over more than 35 years that passed since I founded the Department of Cell and Molecular Biology of UMP Cluj-Napoca, as well as the Laboratory of Genetic Explorations of Cluj County Clinical Emergency Hospital I was the leader of a group having permanently about 20 persons (teaching staff, researchers, technicians, Master and Ph. D. students, undergraduate students), a real academic and research training school. I obtained fellowships and sent for training abroad a lot of coworkers (dozens), to universities (London, Sydney), other institutes and laboratories (Genetics, Manchester Regional Center of Molecular Genetics) etc. In my “school” have been trained as undergraduate students, Ph.D. students, M.Sc. students and/or coworkers all staff members of the Discipline of Cell and Molecular Biology of “Iuliu Hațieganu” UMP Cluj-Napoca with whom I collaborated in the period 1978-2009 when I was Chairman of the Discipline. Some former members of my group became University Professors: Ioan Victor Pop (Professor, Discipline of Medical Genetics “Iuliu Hațieganu” UMP Cluj-Napoca), Octavian Popescu (Professor, Discipline of Medical Genetics, “Babeş-Bolyai” University Cluj-Napoca), Ana Mureşan (Professor, Discipline of Drug Control, Faculty of Pharmacy, “Iuliu Hațieganu” UMP Cluj-Napoca). Other former coworkers are presently working abroad: Ioniță Ghiran, Tudor Borza, Mircea Podar, Paul Hodor (in USA), Tudor Ponoran (in Canada) and others.

Currently, I am coordinating the research projects in the First Laboratory of Genetic Explorations of Cluj County Clinical Emergency Hospital, I am finalizing the research projects developed in the Center of Excellence of Molecular Medicine and Neurosciences, UMP Cluj-Napoca, as well as new projects in the Institute of Life Sciences of “Vasile Goldis” Western University, Arad, Romania.

VII. PUBLICATIONS (selected from over 450)

1. SYNOPSIS OF PUBLICATIONS AND THEIR IMPACT

1.1. BOOKS

- Over 26 VOLUMES (BOOKS, MONOGRAPHS, TEACHING VOLUMES) published in several editions in Romanian and foreign publishers: CRC Press (USA), Springer Verlag (USA și Germania).

Synopsis of the impact of scientific books <http://www.worldcat.org/identities/> (02.10.2016)

Benga, Gheorghe Overview

Works:	28 works in 67 publications in 2 languages (65 in English, 2 in Romanian) and 1,738 library holdings
Roles:	Editor
Classifications:	qh601, 574.875

As Editor, 28 works în 67 publication in two languages (65 in English, 2 in Romanian) and 1714 libraries from the WorldCat system.

In addition I am author of 7 books in addition to the 67 publications included in the table above.

1.2. SCIENTIFIC ARTICLES

- Over 350 SCIENTIFIC ARTICLES PUBLISHED IN JOURNALS, INCLUDING: Nature, Biochemistry, Eur. J. Cell Biol., Cell. Mol. Biol., Eur. J. Biochemistry, J. Cell Science, Progress Biophysics Molec. Biol., Molec. Aspects of Medicine, Cell Biol. Int., Biochim. Biophys. Acta, Molecular Pharmacology, J. Membrane Biol., Eur. Biophysics J., Bulletin of Molecular Medicine, etc
- **SYNOPSIS OF THE IMPACT OF PUBLICATIONS (WEB OF KNOWLEDGE, ISI THOMPSON WEB OF KNOWLEDGE (20.09.2016)**

Number of publications: 124; Hirsch index : 24.

Total number of citations: 2030 (a paper has 137 citations, another 115 citations, another 107 citations, all three belonging to the category of “Citation Classics”, as were called papers with over 100 citations).

2. PERSONAL AND ORIGINAL CONTRIBUTIONS IN SCIENTIFIC PUBLICATIONS

2.1. GENERAL PUBLICATIONS

2.1.1. Books and monographs

All are in the specialties of author Se înscriu toate în specialitățile autorului (biologie celulară și moleculară, medicină de laborator, medicină moleculară) and have been written based on a long research experience, work in laboratory and teaching to undergraduate students, M.Sc. students, Ph.D. students and physicians. I am single author of four of the books, principal co-author of two books, single editor of two series, and co-editor of other books.

A. The single-authored books may be considered “**premieres**” in the Romanian scientific literature.

- The monograph “*Biologia moleculară a membranelor cu aplicații medicale*”, Editura Dacia, Cluj-Napoca, 1979, was the first on this topic in Romania, written after my return from the post-doc work with Dennis Chapman. Theoretical and experimental aspects of membrane molecular biology are presented, including also my own results. It was sold out in a few months and received several favorable reviews (“Forum” no.6/1980, p.69; “Viața medicală” no.6/1980, p. 281, “Studii și cercetări de fizică”, no. 2/1981, p. 217-218).

- The book “*Biologie celulară și moleculară*”, Editura Dacia, Cluj-Napoca, 1985, is a synthesis of the field which was a revolution in biology in the second half of the XXth century, written when the “classical” cell biology became molecular. It is not only a synthesis of a great number of references, but it reflects the author’s personal experience of research and teaching of almost 10 years first year medical students. Illustrated with electron microscopic images for the author’s own work or received from experts from Romania or abroad, the book is addressed to specialists in training, as well as to those from former generations, to whom it offers a systematic description of the field. It was greatly appreciated, a great success: thousands of printed copies have been sold out in several months and received many very favorable reviews (including those by Acad. Ștefan Milcu in “Archives de l’Union Médicale Balkanique”, No.5-6/1986, p. 276 of by Professor Ion Anghel, President of the Society of Biological Sciences in “Studii și cercetări de biologie”).

- The book “*Călătorie în microuniversul celulei*”, Ed. Științifică și enciclopedică, 1986, is a brief attractive introduction to the fascinating cell microcosmos, highly accessible to a broad category of readers, however without sacrificing the scientific quality. Several thousands copies were sold out in a few days.

- The book “*Introducere în biologia celulară și moleculară*”, Ed. Medicală Universitară “Iuliu Hațieganu”, 2005, is a condensed monograph, aimed to present an up-date of the basic notions of the field and also be used as a textbook for students in medicine and biology.

B. I am *principal co-author* of two books.

- The book “*Metode biochimice în laboratorul clinic*”, I. Manta, M. Cucuianu, Gh. Benga, A. Hodârnu, Editura Dacia, Cluj-Napoca, 1976, is an up-date of a famous book “Methods of clinical laboratory” ((I. Manta, Al. Ciplea) that was used for decades in all medical laboratories in Romania. In the chapters written by me I described the physico-chemical methods of analysis (spectroscopy, chromatography), enzymic analysis, ultramicroanalytical determinations, of great practical applicability in every laboratory of biochemistry and molecular biology, being it of medical analyses, or a research laboratory. The book was for decades on the desks and benches of biochemists and laboratory physicians in Romania in a period before the automated analyzers were introduced (even abroad).

- The book “*Biologie celulară*”, I. Diculescu, D. Onicescu, Gh. Benga, L. Popescu, Editura Didactică și Pedagogică, București, 1983, although written as a textbook for all students in medicine (the

first “unique” textbook) has also been useful to physicians and other specialists for their fast information in the field.

C. I am *single Editor of two series published in the prestigious American publishing house CRC Press* (Boca Raton, Florida).

- “***Structure and Properties of Cell Membranes***”, Gh. Benga (ed.), CRC Press, a **three volume** book, 1985, edited following an invitation from CRC Press considering me as “a leader of the field”. I selected for the various chapters dozens of the most reputed scientists from all over the world, who had original contributions in the respective areas. The first volume has 9 chapters written by specialists from USSR (2), Italy (2), USA (3), Germany (1), UK (1), Australia (1) as well as a chapter written by myself. This volume is dedicated to the components of membranes, to the molecular interactions between them, to the mobility of components and to the basal membrane with its alterations in some diseases. The second volume presents various aspects of transport across membranes in 9 chapters written by specialists from Czechoslovakia (4), Poland (3), Switzerland (5), France (4), USA (2), and Canada (1). Volume 3, dedicated to methods and techniques of study of cell membranes, contains chapters written by specialists from USA (9), Israel (2), Germany (1) and Canada (1).

The book including chapters written by specialists from 14 countries addresses to biologists, biochemists, biophysicists etc, active researches in the field of cell membranes, offering them the data necessary to understand the membrane phenomena at the molecular level. The book was a great success: had to be reprinted after the first print run of 700 copies was sold out, received many favorable reviews **and was mentioned in *British Encyclopaedia***.

- The book “***Water Transport in Biological Membranes***”, Gh. Benga (Ed.) CRC Press, Boca Raton, Florida 1989, in two volumes, had chapters written by experts in the field from 7 countries, practically included contributions of all people active in the field until 1988. The first volume includes 9 chapters written by specialists from USA (10), Germany (6), The Netherlands (2), Japan (1), on water transport in systems ranging from model membranes till isolated cells. The second volume, devoted to mechanisms of water transport in various cells up to the whole organism. The book has also been received very well.

D. I am co-editor of 3 books, together with American scientists (Fred Kummerow și Ross Holmes), England (Harold Baum) and The Netherlands (Joseph Tager), one is a volume published in the series *Annals of the New York Academy of Science*, while two other volumes are published by Springer Verlag (New York and Berlin).

- “***Biomembranes and Cell Function***”, F.A. Kummerow, Gh. Benga R.P. Holmes (eds), New York Academy of Sciences, 1983, is Volume 414 of *Annals of the New York Academy of Sciences*, cuprinzând contribuțiile participanților la Workshop-ul co-organizat în 1982 la New York. It was the most demanded volume of *Annals* for that year, being reprinted after 5,000 copies of the first print run have been sold out !

- “***Membrane Processes: Molecular Biology and Medical Applications***”, Gh. Benga, H. Baum, F.A. Kummerow (eds), Springer Verlag, New York, 1984, presents in an original approach the issue of the relationships between the basic research of molecular biology and the practical applications in this field. In the book I reviewed Benga group’s research on the structural and functional properties of the human liver mitochondria, as well as those on the water diffusion across the membrane of human erythrocytes. The book was reviewed by experts from many countries in journals from *England: Exp. Biology*, 44, 1985; *Trans. Biochem. Soc.*, 2, 1985; *Biochem. Education*, 14, 1/1986; *Czechoslovakia: Folia biologica*, 32, 1986; *Germany: Biologische Rundschau*, 24, 5/1986; *Biologisches Zentralblatt*, 107, 4/1988; *Forum mikrobiologie*, 2, 4/1986; *Studia Biophysica* 105, 3/1985; *India: The Nucleus*, 28, 1-2/1985; *Italy: Biochimica clinica*, 10, 8/1986; *The Netherlands: Bioelectrochemistry & Bioenergetics*, 14, 1985; *Tijdschrift voor Genseskunde*, 42, 4/1986; *Vakblad voor biologen* 66, 17/1986; *Israel: Harefush*, 109, 10/1986; *Romania: Rev. Roum. Biochem.*, 22, 1985; *Spain: Rev Espanola de Fisiol.* 2/1985; *USA: Biological. Abstracts*, 28, 2/1985;

- "***Biomembranes. Basic and Medical Research***", Gh. Benga, J.M. Tager (Eds.), Springer Verlag, Berlin-Heidelberg, 1988, includes chapters (written by 43 specialists from Romania, USSR, Belgium, Yugoslavia, The Netherlands, Israel, UK, Italy, USA, Spain, Germany), in three parts: basic mechanisms with medical significance regarding the structure and function of membranes, implications in pathology of the subcellular membranes and of the plasmalema. A chapter reviewing the research of our group regarding the changes of water permeability of erythrocyte membrane from patients with Duchenne muscular dystrophy is also included. The book has also been enthusiastically reviewed in many publications from *England*: General Pharmacology, 21/1990; Comp. Biochem. Physiol. 4/1989; *Czechoslovakia*: Bull. Czechoslovak Biochem. Soc. 17, 1/1989 *Germany*: Entomologia Generalis, 15, 3/1990, Biochemie und Physiologie der Pflanzen 183, 3-4/1989, *Italy*: Biochimica Clinica 13, 1/1989; *Romania*: Rev. roum. Biochim. 26, 3/1989; *Spain*: Kemixon Reporter, 407/1989.

2.1.2. Teaching volumes

It should be mentioned that I have also authored or edited more than a dozen volumes for teaching purposes, some of them are also "premieres": textbooks for students in medicine (Gh. Benga, ***Biologie celulară***, Litografia I.M.F. Cluj-Napoca, 1980, the first one in Romania), laboratory guides of cell and molecular biology for students in medicine (four editions), protocols for practical work in a FEBS Advanced Course and in two ICRO /UNESCO Training Courses.

2.1.3. Reviews

I have been invited to write reviews on various aspects of biological membranes with medical applications by well-known editors or publishers, reviews that were included in prestigious series: e.g. Vol. 5 of "Biological Membranes. Physical Fact and Function" (ed. Dennis Chapman, in Academic Press, London, 1984), "Biochemical Research Techniques" (ed. John Wrigglesworth, in John Wiley & Sons, London, 1983), Progress in Biophysics and Molecular Biology (Pergamon Press, Oxford), International Review of Cytology (Academic Press, New York), Current Opinion in Cell Biology (Nature Publishing House). One of these reviews: Gh. Benga, R.P. Holmes, in "Progress in Biophysics and Molecular Biology", T.L. Blundell (Ed.), Pergamon Press, Oxford, 1984, 43, 195-257, has been cited over 120 times in Science Citation Index (a paper with over 100 citations is labelled as "*Citation Classic*").

Recently, I was invited to review the field of water channel proteins, considering my important contributions to the field ; such are the articles nos. 153, 166, 169, 172, 173, 182, 184, 187 from the list of publications, and, particularly the extensive review (Gh. Benga, Water channel proteins (later called aquaporins) and relatives: past, present and future, IUMB Life 61 (2), 112-133, (2009), published in the official journal of the International Union of Biochemistry and Molecular Biology, being invited by Prof. Angelo Azzi, the President of IUBMB.

2.2. ORIGINAL CONTRIBUTIONS IN PAPERS PUBLISHED IN SCIENTIFIC VOLUMES AND JOURNALS

My main basic and advanced contributions are in the modern fields of biomedical sciences, namely **membrane molecular biology with medical applications** and **medical genetics**.

Some original contributions are presented on the site, see « **RESEARCH PROJECTS OF GHEORGHE BENGA** ».

LIST OF SCIENTIFIC PUBLICATIONS OF GHEORGHE BENGA

I. BOOKS AND MONOGRAPHS

1. I. Manta, M. Cucuianu, Gh. Benga, Adriana Hodârna, Metode biochimice în laboratorul clinic, Editura Dacia, Cluj-Napoca, 1975.

2. Gh. Benga, Biologia moleculară a membranelor cu aplicații medicale, Editura Dacia, Cluj-Napoca, 1979.
3. Gh. Benga, Membrane processes: molecular biology and medical applications, Gh. Benga, H. Baum, F.A. Kummerow, (eds.), Springer Verlag, New York, 1984.
4. Gh. Benga, Biomembranes and cell function, F.A. Kummerow, Gh. Benga, R.P. Holmes (eds.), Annals of New York Academy of Sciences, vol. 414, New York, 1983.
5. I. Diculescu, D. Onicescu, Gh. Benga, L. Popescu, Biologie celulară, Editura Didactică și Pedagogică, București, 1983.
6. Gh. Benga, Structure and properties of cell membranes, Gh. Benga (Ed.), CRC Press, Boca Raton, Fl. (USA), vol. I-III, 1985.
7. Gh. Benga, Biologie celulară și moleculară, Gh. Benga, Editura Dacia, Cluj-Napoca, 1985.
8. Gh. Benga, Călătorie în microuniversul celulei, Editura Științifică și Enciclopedică, București, 1986.
9. Gh. Benga, J.M. Tager (eds.), Biomembranes: basic and medical research, Springer Verlag, Berlin, 1988.
10. Gh. Benga (Ed.), Water transport in biological membranes, CRC Press, Boca Raton, Fl. (USA), vol. I-II, 1989.
11. Gh. Benga, Iovanca Haiduc, D. Fowler, I.M. Năstase (eds.), Seria “Monografii de medicină moleculară, societate și sănătate publică”, vol. 1. Aspecte negative multiple ale înlocuirii sistemelor centralizate de alimentare cu căldură a blocurilor de locuințe din România cu sisteme termice individuale alimentate cu gaz natural (centrale “de apartament”, convectoare etc)/ Multiple negative aspects of replacing the central heating systems of building blocks in Romania with individual appliances fuelled with natural gas (“apartment” heaters, convectors etc), Editura Medicală Universitară “Iuliu Hațieganu”, Cluj-Napoca, 2003.
- 11bis. Gh. Benga, Iovanca Haiduc, D. Fowler, I.M. Năstase (eds.), Seria “Monografii de medicină moleculară, societate și sănătate publică”, vol. 1. Aspecte negative multiple ale înlocuirii sistemelor centralizate de alimentare cu căldură a blocurilor de locuințe din România cu sisteme termice individuale alimentate cu gaz natural (centrale “de apartament”, convectoare etc)/ Multiple negative aspects of replacing the central heating systems of building blocks in Romania with individual appliances fuelled with natural gas (“apartment” heaters, convectors etc), Editura Medicală Universitară “Iuliu Hațieganu”, Cluj-Napoca, România, Ediția a 2-a (revizuită și adăugită), 2004.
12. Gh. Benga, Introducere în biologia celulară și moleculară, Editura Medicală Universitară “Iuliu Hațieganu”, Cluj-Napoca, 2005.

II. TEACHING VOLUMES

13. Ileana Abrudan, Cornelia Bicleșeanu, Valeria Băltescu, O. Bârză, D. Bedeleanu, Gh. Benga, Victoria Borza, Adriana Hodârnu, Gh. Jebeleanu, L. Mureșan, I. Proinov, Rozalia Tulinca, Cornelia Țărmure, Lucrări practice de biochimie, Litografia I.M.F. Cluj-Napoca, 1975.
14. Gh. Benga (sub redacția), Fișe pentru lucrările practice de biologie celulară, Litografia I.M.F. Cluj-Napoca, 1979.
15. Gh. Benga, (sub redacția), Îndrumător pentru lucrările practice de biologie celulară, Litografia I.M.F. Cluj-Napoca, 1980.
16. Gh. Benga, (sub redacția), Îndrumător pentru lucrările practice de biologie celulară, Litografia I.M.F. Cluj-Napoca, 1982.
17. Gh. Benga, Curs de biologie celulară pentru studenții în medicină, Litografia I.M.F. Cluj-Napoca, 1980.
18. Gh. Benga, Brief laboratory guide, FEBS Advanced Course “Biomembranes and Diseases”, Cluj-Napoca, June 16-28, 1986.

19. Gh. Benga, (Ed.), Laboratory protocols, FEBS Advanced Course "Biomembranes and Diseases", Cluj-Napoca, June 16-28, 1986.
20. Gh. Benga, (Ed.), FEBS Advanced Course "Biomembranes and Diseases", Cluj-Napoca, June 16-28, 1986.
21. Gh. Benga (Ed.), ICRO /UNESCO Training Course "Biomembranes and Diseases", Cluj-Napoca, July 10-21, 1995.
22. Gh. Benga (Ed.), Îndrumător pentru lucrările practice de biologie celulară și moleculară, Editura Carpatica, Cluj-Napoca, 1997.
23. Gh. Benga (Ed.), ICRO/UNESCO Training Course "Biomembranes and Molecular Medicine", Cluj-Napoca, July 19-30, 1999

III. PUBLISHED PAPERS (Selected)

1. Adriana Popesco, Gh. Benga, D. Coman, V. Pop, L'étude comparative des acides amines libres, seriques et biliaries, dans les maladies du foie, Rev. Int. d'Hepatol., 16, 1419- 1428, 1966.
2. Gh. Benga, D. Coman, Analiza cromatografică a aminoacizilor liberi din bilă în ateromatoză, Spitalul, 15, 312-315, 1967.
3. Adriana Hodârnu, Mirela Căprioară, D. Coman, Gh. Benga, V. Pop, Modificările acizilor nucleici și ale aminoacizilor liberi în malformațiile congenitale, Obstetrica Ginecologia, 17, 193-198, 1969.
4. D. Coman, Gh. Benga, Mirela Căprioară, V. Pop, Modificările aminoacizilor liberi serici și urinari în insuficiența renală acută și cronică, Medicina Internă, 10, 108- 117, 1969.
5. V. Gligore, Al. Duțu, Gh. Benga, G. Sopon, M. Schiau, Cercetări privind unele modificări electrolitice în reumatismul Bouillaud-Sokolski și endocarditele recidivante (Nota I), Clujul Medical, 42, 481-488, 1969.
6. Al. Duțu, Gh. Benga, E. Sopon, V. Gligore, Cercetări privind modificările potasiului eritocitar în reumatismul Bouillaud-Sokolski și endocarditele recidivante (Nota II), Clujul Medical, 43, 153-157, 1970.
7. O. Bârză, Gh. Benga, Letiția Mureșan, Silvia Dancea, R. Tilinca, Study of respiratory chain in small amounts of biological materials. I. Stability and enzymatic properties of liver mitochondria in diluted suspensions, Enzyme, 12, 433-448, 1971.
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