

Piero Pollesello
Ph.D., Docent (Adjunct Professor), FESC, FHFA

**CURRICULUM VITAE
(SCIENCE & PHARMA BUSINESS)**

SUMMARY

With a master degree in chemistry and a PhD in biochemistry, Piero Pollesello started his career as a research scientist and a teacher at the University of Trieste (Italy) before moving to the University of Helsinki where he lectured in medical chemistry.

As a scientist, he became a specialist in the application of Nuclear Magnetic Resonance Spectroscopy to bio- and medical sciences and to drug discovery, and worked on a broad range of research topics such as the characterization of human pathologies, the determination of the phosphorylation potential on perfused tissues and organs, the detection and quantification of metabolites in crude extracts, the determination of protein structure and protein-ligand interaction (e.g. on troponin C and phospholamban), and finally the pharmacological characterization of a new first-in-class cardiovascular drug. He co-operated with the NMR groups of the Institute of Biotechnology of Helsinki on the structure of troponin C and its complex with TnI, with the Department of Pharmacology and Cell Biophysics of the University of Cincinnati on the structure and function of phospholamban, with the Center for Molecular and Tumor Biology of the Karolinska in Stockholm on the structure and function of UDP-pyrophosphatase, and with the Institute of Biochemistry of the University of Trieste on the structure of oligosaccharides of pharmaceutical interest. His international network of co-operation is broad and solid.

He worked as scientific director for six years and led the cardiovascular drug discovery research and later the structural biology group at Orion Pharma in Espoo (Finland), where he substantially contributed to the discovery, patenting, development, registration and launch of a propriety drug which reached the market and is currently sold in circa 60 countries. He obtained an Industrial Diploma Course on “Medical Business Strategy” at the SIMI in Copenhagen.

The publication list has over 130 full papers in over 40 peer-reviewed journals (such as *Adv. Ther.*; *Am. J. Physiol.*; *Anal. Biochem.*; *Bas. Clin. Pharmacol. Toxicol.*; *Biochem. J.*; *Biochem. Pharmacol.*; *Biochim. Biophys. Acta*; *Biophys. J.*; *Br. J. Pharmacol.*; *Carbohydr. Res.*; *Cardiovasc. Drug Rev.*; *Cardiovasc. Drugs Ther.*; *Cardiovasc. Res.*; *Chem. Biol. Drug. Design*; *Circulation*; *Curr. Opin. Crit. Care*; *ESC Heart Fail.*; *Eur J Heart Fail*; *Eur. Heart J.*; *Eur. Heart J. Suppl.*; *Eur. J. Biochem.*; *Eur. J. Pharmacol.*; *Exp. Cell Res.*; *IDrugs*; *Int. J. Cardiol.*; *J. Biol. Chem.*; *J. Cardiovasc. Pharmacol. Therapeut.*; *J. Cardiovasc. Pharmacol.*; *J. Cell Biol.*; *J. Clin. Pharmacol.*; *J. Hepatol.*; *J. Magn. Reson. Imag.*; *J. Med. Econ.*; *J. Mol. Cell. Cardiol.*; *J. Physiol. Pharmacol.*; *Magn. Reson. Chem.*; *Magn. Reson. Med.*; *Mol. Cell. Biochem.*; *NMR Biomed.*; *Pharmaceut. Biomed. Anal.*; *Pharmacol. Rep.*; *PLoS ONE*; *PNAS*; *Scand. Cardiovasc. J.*; *J. Clin. Med.*, *Med Res. J.*, etc.) cited until now over 7000 times (PoPTM h-index=49, g-index=81, m>1,3), and over 100 other scientific contributions (among which many book chapters, abstracts to congresses, and ten patents).

He has been a member of the Editorial Board of *J. Cardiovasc. Pharmacol.* from 2005. He has been member of the Translational Research Committee of the Heart Failure Association within the European Society of Cardiology in 2012-16, and was re-elected in 2020. He was elected Fellow of the European Society of Cardiology (FESC) in November 2013 and of the Heart Failure Association (FHFA) in December 2017. He is currently member of the Industrial Liaison Committee of the European Society of Cardiology.

During his career Piero Pollesello has demonstrated great flexibility and adaptability to new working areas and environments. In every work group, in Italy or Finland, he has been creative and innovative. He was the first to apply NMR to biochemistry in the Helsinki area in 1990-91 during his first post-doc fellowship at the Institute of Medical Chemistry of the University of Helsinki. He is used to working in multicultural and multidisciplinary environments, has a strong cultural competence, and strong experience both in the academic and industrial research fields. He cooperated as evaluator in the European Union framework FP6 in the years 2003-2005.

From 2003 to 2006 he served as Senior Scientific Advisor for the Cardiovascular and Critical Care Proprietary Products at Orion Pharma. In this role, he coordinated the Investigator Initiated Studies and Publication strategies, and the contacts with a network of international Key Opinion Leaders. From 2004 to 2008 he has been secretary of the “Business Team for the Cardiovascular and Critical Care therapeutic area” at Orion Pharma and as such cooperated in the strategic planning for proprietary products in his therapy area. In 2007 he was appointed Global Brand Manager in the Critical Care area of Orion Pharma Proprietary Products Division to manage the brand of SIMDAX[®] and pave the way for the launch of *Dexdor*[®]. In these years he also organized more than 50 international scientific and educational events link to commercial exhibition.

Piero Pollesello has proven track records in biochemistry, drug discovery, pharmacology, and strategic marketing, as well as strong project leadership and management skills. He has excellent verbal/written communication skills and ability to manage multiple projects.

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PERSONAL DATA

Name: Piero Pollesello

Date and place of birth: August 9, 1960, Trieste, Italy

Nationality: Italian

Citizenships: Italian / Finnish

Family status: married, three children (31, 29, 27)

Current professional position: Global Brand Manager
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[FaceBook](#)
[ResearchGate](#)
[Blog](#)
[Twitter](#)

EDUCATIONAL QUALIFICATIONS

(E1) Laurea in Chimica, Università degli studi di Trieste, Italy, (Master in Chemistry on "Purification and characterization of alkaline phosphatase, a calcium binding glycoprotein, from matrix vesicles of preosseous cartilage"), graduation with 110/110 cum laude, in 1984.

(E2) Titolo di Dottore di Ricerca in Biochimica, Ministero dell'Università e della Ricerca Scientifica e Tecnologica, Roma (Philosophiae Doctor in Biochemistry, doctoral thesis written at the Dipartimento di Biochimica, Biofisica e Chimica delle Macromolecole dell'Università degli studi di Trieste, Italy, on "The endochondral calcification, from the resting cartilage chondrocytes to the matrix vesicles"), in 1990.

(E3) Industrial Diploma in Medical Business Strategy at the Scandinavian International Management Institute (Copenhagen), grade A, in 2005.

LANGUAGES

Italian:	mother language;
English:	Cambridge AE certificate, grade A (August 2003);
Swedish:	(1) Official state examination "lilla språkprovet i svenska" (Utbildningsstyrelsen, The Finnish National Board of Education, 1995) (2) Official state examination for authorized translator (Auktoriserad Translator från Svenska till Italienska), Finland, 1994;
Finnish:	Official state examination "Keskitaso kielikoe" (Opetushallitus, The Finnish National Board of Education, 2007).

CAREER HIGHLIGHTS

University: post-doc & teaching	1989-1992	I received a degree in chemistry and a PhD in biochemistry at the Universities of Trieste (Italy), where I was also a post-doc research scientist. After moving to Finland I was a researcher and a teacher at the University of Helsinki, where I was elected senior lecturer [Adj.Prof./Dosentti] in medical chemistry at the Faculty of Medicine.
Orion Pharma R&D: scientist & senior scientist	1992-1998	At Orion Pharma I started as NMR expert in the Chemistry Department, with research projects in Medicinal Chemistry, Structural Biology and Cardiovascular Drug Discovery.
Orion Pharma R&D: Head of the Cardiovascular Drug Discovery Research	1998-2002	I became Head of the Cardiovascular Drug Discovery Research, leading a group of 10 scientists, with responsibility over a matrix of 40 researchers. I contributed substantially to the discovery, patenting, development, registration and launch of levosimendan.
Orion Pharma R&D: Group Leader of Structural Biology	2002-2003	Nominated group leader of Structural Biology, I held responsibilities in several research projects.
Orion Pharma Businesses: Senior Scientific Advisor	2003-2006	Nominated Senior Scientific Advisor for the Cardiovascular and Critical Care Proprietary Products, I coordinated the Investigator Initiated Studies and publication strategies, and the contacts with a network of international Key Opinion Leaders. From 2004 to 2008 I have been secretary of the "Business Team for the Cardiovascular and Critical Care therapeutic area" and, as such, I cooperated in the strategic planning for proprietary products.
Orion Pharma Businesses: Global Brand Manager	2006-today	Appointed Global Brand Manager in the Critical Care area of the Proprietary Products Division, I managed the mature brand of SIMDAX® and pave the way for the launch of <i>Dexdor</i> ®. In these years I have created and launched global campaigns, over 40 international scientific and marketing events, and re-created the marketing strategy of SIMDAX after 2009 in cooperation with the Global Marketing Team, bringing the IMS up 100% in 12 years, starting on the 8 th year after global launch.

RESEARCH ACTIVITIES IN MORE DETAILS

(all references can be found in the list of full papers and chapter in books on page 17 and following)

(a) Cartilage, its metabolism and functions.

Epiphyseal plate calcifying cartilage and articular cartilage were investigated to clarify the relation between their metabolism and functions.

To better understand the process of cartilage calcification, the energy metabolism of resting and ossifying chondrocytes from the growth plate of pre-osseous cartilage was studied by ^{31}P -NMR (P6, P7) and the composition and physico-chemical properties of their plasma membranes were compared (P4).

Finally, a membrane enzyme expressed by ossifying chondrocytes and exported into the calcifying cartilage matrix in small plasma membrane vesicles (alkaline phosphatase) was isolated and fully characterized as a Ca^{2+} -binding glyco-phosphoprotein (P1, P3, B1, B2)

The ability of phosphoproteins to act as a template for matrix calcification was studied using dentine phosphoprotein as a model (B3). These results support the hypothesis that, during the differentiation of pre-osseous chondrocytes from "resting" to "ossifying", an extensive modification of their plasma membrane occurs. The cells finally become hypertrophic and vesicles rich in alkaline phosphatase are extruded from the plasma membranes into the matrix. This Ca^{2+} -binding glycoprotein is supposed to act as a template for the calcification of the matrix, initiating the process of tissue ossification (P60).

However, the signals that induce the complex cellular response which leads to cartilage calcification are not known yet. The hypothesis that extracellular polyamines could induce the apoptosis of ossifying chondrocytes and production of matrix vesicles containing alkaline phosphatase was tested and discussed (P2).

More recently, a new hypothesis based on the ability of the osteoclasts (in the vessels near the calcification front) to produce free radicals was formulated: it is proposed that free radicals play a role in the calcification process, by modifying the metabolism and the membrane lipid composition of ossifying chondrocytes, leading to their vesiculation (P27)

Articular cartilage was also investigated in studies of similar design (P13). Energy metabolism, replicative ability, intracellular calcium concentration and ionic channels of horse articular chondrocytes were studied to characterize this tissue whose regenerative ability after a pathologic condition is of great interest in the recovery of the functions of the articulations. We proposed that free radicals may play a role in the pathology of the articulation both by modifying the metabolism of articular cartilage and by depolymerizing hyaluronate, whose chemico-physical properties are crucial for the articular functions (P19). A scavenger of free radical induced hyaluronan depolymerization was also tested (P14).

These latest studies required the analysis of chondrocyte lipids. In order to study the lipid composition of articular and ossifying cartilage, a new method was developed.

(b) Development of a new methods for lipid analysis by NMR-spectroscopy. Its application in the study of liver lipid composition, for the diagnosis of fatty liver, and for testing the effects of free radicals on lipids.

A novel method for the analysis of lipids in crude extract was developed (P11). ^1H - and ^{13}C -NMR spectroscopy was used for the detection of phospho- and glyco-lipids with mono- or poly-unsaturated fatty acid chains, free and acylated steroids, and other lipids in crude extracts without any need for prior separation of the various lipid classes. A broad range of molecules belonging to different lipid classes could be identified in one-dimensional ^{13}C -NMR spectra. The technique is non-destructive and the risk of chemical modifications is thus minimized. The method was

developed by using crude extracts of algal origin as a model, for the big variety of lipid classes present in those samples (P8, P10). By this newly developed method, the fatty infiltration of the human liver was studied *in vivo* and *in vitro*. NMR was used to assess the lipid composition of normal and pathologic human livers (P12, P21) and novel applications of magnetic resonance localized spectroscopy (P18) and computer assisted tomography (P23) in the diagnosis of steatosis were set up.

It had been proposed that sublytic amounts of lipid peroxydes cause an increase in the ion permeability of biomembranes, leading to various pathologies. In order to get a broad picture of possible changes in the lipid structure of mitochondria due to free radicals, lipid extracts of mitochondria and liposomes were studied by ^1H -NMR (P5). Moreover, the ability of mitochondria to metabolize propofol, a radical scavenger which induce the mitochondrial permeability transition, was tested by NMR and EPR (P9).

(c) The quantification of phosphorylated metabolites *ex vivo* and *in vitro*

Although ^{31}P -NMR spectroscopy has been used in living systems for many decades, some basic problems related to the visibility of the phosphorylated metabolites in the cytosol or in intracellular organelles still remain. The possibility to apply NMR spectroscopic techniques to the study of perfused organs or superfused tissues greatly depends on the degree of visibility of cytosolic and intramitochondrial inorganic phosphate, di- and tri-phosphorylated nucleosides, and phosphocreatine.

To better understand the subject, rat liver was perfused and stimulated so that part of the cytosolic inorganic phosphate entered mitochondria, while the whole organ Pi signal was followed by ^{31}P -NMR. The relative concentrations of phosphorus metabolites in the liver were measured by ^{31}P -NMR spectroscopy. It was shown that a major part of the intramitochondrial Pi was invisible by NMR (P15). Moreover, in order to unambiguously assign the ^{31}P -NMR spectra of crude extracts, a new fast gradient assisted 2D NMR technique was also developed (P20, P22, B6, B7).

By this novel technique, it was possible to analyse and quantify the phosphorylated metabolites in isolated mitochondria (P33). In addition, it was possible to quantify phosphorylated metabolites that are usually present in low concentrations, such as UDP-glucose and UDP-galactose, in cultured cells (P24, P46).

(d) Target-protein based drug discovery: novel generations of cardiovascular drugs

Discovery of a calcium sensitizer which, by binding directly to troponin C, exert an inotropic effect without unbalancing the energy consumption of the heart by an increase of oxygen demand.

The contractile system works in a highly organized manner to bring about muscle contraction and relaxation. The troponin complex is essential for the regulation of this function. This heterotrimeric protein complex is anchored on the thin filament by its tropomyosin-binding unit troponin T (TnT). The contraction is regulated by a calcium dependent interaction between troponin C (the calcium-binding unit, TnC) and troponin I (the inhibitory unit, TnI). Muscle contraction is initiated by calcium binding to the N-domain of troponin C altering the interaction between TnC and TnI. This causes the inhibitory region of TnI to detach from actin and bind to TnC. Inhibition of the actomyosin ATPase is thus removed and muscle contracts.

Two decades ago a new class of drugs was proposed for treatment of cardiac failure. Such drugs would function by making the regulatory thin filament proteins more sensitive to calcium and/or stabilize calcium-induced changes resulting in stronger contraction of the myocardial muscle without an increase in intracellular calcium concentration. cTnC was considered to be an ideal

target for these drugs which were named as calcium sensitizers as the calcium binding to cTnC is responsible for the initiation of the contraction.

In my studies, the binding of a new calcium sensitizer, levosimendan, to human cardiac troponin C was elucidated. Studies performed on recombinant human cTnC and a on a site-directed mutant showed that levosimendan modulated the calcium-induced conformational change in cTnC, and revealed the role of several aminoacids in the binding of the drug to the N-terminal domain of cTnC. Furthermore, NMR studies performed on the N-terminal fragment of cTnC gave preliminar structural information on the drug-protein complex. These data were used to build an optimized model of the drug-protein complex, in which levosimendan binds cTnC at the hydrophobic pocket of the N-terminal domain (P17, P35). The role of levosimendan as a calcium sensitizer was discussed (P34, P44). Further studies assessed the complete tertiary structure of the N-terminal of human recombinant cTnC (P26) and to study the binding of cTnI peptides to this protein (P31) and the binding of levosimendan to TnC-TnI complex (P43).

Structure to Function relationship: search for inhibitors of phospholamban.

Phospholamban (PLB) is a protein present in cardiac, slow-twitch and smooth muscle, which play a pivotal role in the diastole of the heart muscle as inhibitor of the sarcoplasmic and endoplasmic reticulum Ca^{2+} -ATP ase (SERCA2) PLB can be phosphorylated by both cAMP- and Ca^{2+} /calmodulin-dependent. The phosphorylation/dephosphorylation of phospholamban has been shown to regulate SERCA2 in myocytes. PLB, in its non-phosphorylated form, binds to a specific region of the large loop in the cytoplasmic domain of SERCA2 and inhibits this pump by lowering its affinity for Ca^{2+} , while the phosphorylated form does not inhibit SERCA2. It has been shown that in myocardium from heart failure patients, the non-phosphorylated phospholamban to SERCA2 ratio is higher than in the physiological tissue. The development of a drug against non-phosphorylated PLB was therefore proposed and, during the last decade, the objective has been to elucidate, at least partially, the secondary structure of PLB.

In my work, the structure of a series of synthetic peptides was investigated in order to elucidate the 3D structure of this protein (P29, P38, P40). The secondary and tertiary structures of the peptides (needed for a rational drug design project) were obtained by 2D homonuclear NMR.

These studies allowed to find a phospholamban inhibitor (P70) and to file a series of patents, which were the first ones protecting possible drugs obtained via knowledge of a target protein structure (PA2, PA3). Structural and functional studies on point-mutated phospholamban fragments *in vitro* and *in vivo* (in transgenic rats) allowed performing S.A.R. analyses (P38, P56). Moreover, studies on the phosphorylated phospholamban were also carried out (P40) to elucidate the role of the two phosphate groups in the inactivation of the protein.

A series of preliminary experiments was performed on phospholipid mixtures by the use of novel gradient-assisted selective ^1H - ^{31}P HMQC to test the applicability of these new NMR pulse sequences in different solvent systems (P22, P28).

Pharmacological characterization of the novel cardiovascular drug levosimendan.

The relation between the structure of a novel cardiovascular drug (levosimendan) and its pharmacological profile as calcium sensitizer and K_{ATP} channel opener was studied in detail (P33, P35, P37, P39, P43, P44, P47, P53, P54, P57, P59, P61, P62, P64, P66, P67, P69, P71, P72, P73, P74, P76, P80) and summarized in several review articles (P48, P50, P52, P63, P65, P68, P79, P81, P82). Structures of analogs of levosimendan were compared (P41, P44). The effect of levosimendan on the energy balance of the heart was investigated (P45, P49) after setting up a model for studying the relationship between the phosphorylation potential of a stunned heart and its mechanical output

(P16). Pollesello is the most prolific author on levosimendan in PubMed with 75 peer-reviewed and PubMed listed papers on this novel inodilator.

RESEARCH EXPERIENCE AS POST-DOCTORAL FELLOW, GRANTS RECEIVED, RESEARCH POSITIONS.

(G 1) From October 1989 to December 1990 an NMR project on "The relation between chondrocyte metabolism and matrix composition in articular and conjunction cartilage" at the NMR facilities of the University of Trieste and of the Area di Ricerca di Trieste, was supported by grants from the Italian Ministry dell'Università e della Ricerca Scientifica e Tecnologica.

The results have been published in 2 full papers (Biochem. Biophys. Res. Comm; Magn. Res. Med)

(G 2) From January to December 1990 a project on "Development of protocols and methods for in vivo NMR experiments" at the NMR facilities of the Institute of Radiology of the University of Trieste was supported by a personal grant from "Unita' Sanitaria locale n.1 - Triestina", Trieste, Italy

(G 3) From January to May, 1991 an NMR project on "The lipid composition of mitochondria and the lipid peroxidation in biological membrane" at the Department of Medical Chemistry of the University of Helsinki (under the supervision of Prof. N.-E. L. Saris), was supported by grants from the Finnish Medical Society, the Finnish Society of Sciences and Letters, the Magnus Ehrnrooth Foundation, Finland, and the Italian Ministry dell'Università e della Ricerca Scientifica e Tecnologica.

The results have been published in 2 full papers (Biochem. Pharmacol.; Biochem. Biophys. Res. Comm.)

(G 4) From May 1991 to April 1992, two research projects on "High field NMR studies in vivo on articular cartilage metabolism" and "Pathologic degradation of polysaccharides in synovial fluid and possible use of antioxidant for therapeutical purposes" at POLYbiòs, Area di Ricerca di Trieste, were supported by grants from the Italian Ministry dell'Università e della Ricerca Scientifica e Tecnologica (national research theme 11) and the research division of Fidia S.p.A., Abano Terme, Italy.

The results have been published in 3 full papers (Exp. Cell Res.; Biochem. Biophys. Res. Comm.)

(G 5) From August 1991 to July 1992, a research project on "Use of high field NMR in the analysis of lipid extracts from different algal species of the Northern Adriatic Sea" at POLYbiòs, Area di Ricerca di Trieste, was supported by a grant from the Italian Ministry dell'Università e della Ricerca Scientifica e Tecnologica (National research theme 8).

The results have been published in 3 full papers (Anal. Biochem.; J.Appl.Phycol.)

(G 6) From January to October 1992, a reseach project on "Analysis of the lipid content of fatty liver and development of test-objects for the quantification of steatosis by magnetic resonance localized spectroscopy" at the Institute of Radiology of the University of Trieste and at the Department of Medical Chemistry of the University of Helsinki was supported by a grant from the Italian Ministry dell'Università e della Ricerca Scientifica e Tecnologica.

The results have been published in 3 full papers (Biochem.Biophys. Res. Comm.; Mag. Res. Imaging; J.Hepatology)

(G 7) From February to December 1992, a research project on "Phenylephryn effects on energy metabolism of perfused rat liver: an ex vivo ³¹P-NMR spectroscopic study" at the Department of Biochemistry, Biophysics and Chemistry of the Macromolecules of the University of Trieste and at

the Department of Medical Chemistry of the University of Helsinki, was supported by a grant from the Italian Ministry dell'Università e della Ricerca Scientifica e Tecnologica, the Finnish Medical Society and Orion Corporation Research Foundation.

The results have been published in 2 full papers (Biochem.J., NMR in Biomedicine)

(G 8) from May, 6th, 1992 to November, 6th, 1992, at the Department of Biochemistry, Biophysics and Chemistry of the Macromolecules of the University of Trieste (contratto ai sensi dell'art. 26 D.P.R. 382/80), a research project on "³¹P NMR spectroscopy of articular cartilage: effects of oxygen-derived free radicals", under the supervision of Prof. S. Paoletti, was supported by a personal grant from the Italian Ministry dell'Università e della Ricerca Scientifica e Tecnologica, The results have been published in 1 full paper (Exp. Cell Res.)

(G 9) From November 1992 to July 1993, a research project on "Effect of inotropic drugs of the phosphorylation potential, mechanical parameters and oxygen consumption in isolated guinea pig heart during reperfusion after ischemia: a ³¹P-NMR study" at the Institute of Biotechnology of the University of Helsinki was supported by a grant from Orion Corporation Research Foundation. The results have been published in 1 full paper (Ann. N.Y. Acad. Sci.) ;

(G 10) From December 1992, a permanent research position at Orion Corporation, Orion Pharma, R&D (Espoo, Finland) as senior scientist was assigned. A drug discovery research project on the interaction between calcium sensitizers and cardiac Troponin c was started. On July 1, 1998, Pollesello was appointed Head of Preclinical Cardiovascular Research, and, in September 1 2002, Group Leader of Structural Biology in the Drug Discovery & Pharmacology unit.

(G 11) From June, 1, 1996, a three-year research project on the use of NMR in the drug discovery process was started in cooperation with VTT-kemia and with a grant from TEKES (#40588/97). The results have been so far published in 1 full paper (Biophys.J.) ;

(G 12) From January, 1, 1997, a three-year research project on the structure of cardiac Troponin c was started in cooperation with VTT-kemia and Institute of Biotechnology and with a grant from the Finnish Academy (MATRA). The results have been so far published in 8 full papers (e.g. in J.Biol.Chem., Eur. J. Biochem., J.Mol Cell Cardiol.) ;

(G 13) From January, 1, 1997, to November 30, 2001, a four fold one-year research project on cardiovascular drug discovery at Orion Pharma has been funded by TEKES (#1047/97, #11/99, #1034/99, #673/01). The results have been patented and, so far, published in 5 full papers (Biophys. J., Cardiovasc. Res., Circulation, Chemical Biology & Drug Design);

(G 14) From January, 1, 2001, to December 31, 2002, a two-year research project on "Gene expression in diseased hearts and/or after cardiovascular medication" at Orion Pharma and at the Universities of Helsinki and Göttingen has been funded by TEKES Drug 2000 (#617/01) ;

(G 15) From December 1, 2001, to November 30, 2002, a one-year research project on "Drug Discovery of NCX inhibitors" at Orion Pharma has been funded by TEKES (#411/02). The results have been patented and published in various full papers (Eur J Pharmacol, PloS ONE, etc.)

MEMBERSHIPS

(M 1) The Register of Authorised Chemists in Italy (Ordine dei Chimici, Albo Provinciale di Trieste), from 1985 to 1999

- (M 2) The Italian Society of Biochemistry (SIB), member from 1987 to 1997.
- (M 3) Gruppo di Discussione per le Risonanze Magnetiche, Italy (GDRM), member from 1991 to 1998.
- (M 4) POLY-bios Research Centre (Area Science Park, Trieste, Italy), member from 1991 to 1997.
- (M 5) The Register of Authorised Translator in Finland (Autoriserad translator från Svenska till Italienska), from 1994
- (M 6) Suomen Kääntäjien ja tulkkien liitto - ordinary member, in 1994-1996
- (M 7) The Register of Adjoint Professors in the University of Helsinki (Helsingin yliopiston dosenttiyhdistys ry - Docentförening vid Helsingfors universitet rf.), member from 1995
- (M 8) The American Society for Biochemistry and Molecular Biology - regular member, from 1998 to 2007.
- (M 9) The National Graduate School in Informational and Structural Biology, listed as industrial collaborator in 2002-3.
- (M 10) American Heart Association, member in 2006-7
- (M 11) Heart Failure Association (HFA) of the European Society of Cardiology (ESC), member from 2005, fellow (FESC) from 2013, fellow (FHFA) from 2017.

ACADEMIC TASKS

- (T 1) In the academic years 1983/84, 1984/85, 1985/86, 1986/87, 1987/88 assistant responsible for the laboratory practice in the course of Biochemistry (held by Prof. N. Stagni), School of Chemistry, Faculty of Science of the University of Trieste.
- (T 2) From February 1st to April 30th, 1991, Assistantship in the Department of Medical Chemistry of the University of Helsinki (Prof. N.-E. L. Saris) for the course of Medical Chemistry.
- (T 3) Lecturer at the Theoretical course "Marine Microbiology and Biochemistry" organized by the International Centre for Genetic Engineering and Biotechnology (UNESCO) (Trieste, I, 1991)
- (T 4) In the academic year 1992-93, lecturer (tuntiopettaja) at three courses organized for PhD students by the Institutes of Biochemistry and Biotechnology of the University of Helsinki ("Analysis of Protein by NMR, NMR applied to Biochemistry, Analysis of lipids by NMR").
- (T 5) In the academic year 1995-96, lecturer (tuntiopettaja, dosentti) at the Institute of Biomedicine of the University of Helsinki (School of Medicine, Teaching of Medical Chemistry).
- (T 6) In Dec 2003, lecturer (tuntiopettaja, dosentti) at the University of Helsinki (School of Medicine) S-114.504 Basics in Molecular and Cell-biology course.
- (T 7) In Aug 2005, lecturer at the Graduate School in Pharmaceutical Sciences (School of Pharmacology, Viikki Campus).
- (T 8) Lecturer in the course on "Decompensated Heart Failure" (Försämrad kronisk hjärtsvik) listed in the Institute for Professional Development of the Swedish Doctors [IPULS] catalog on Oct 10 2004 [http://edu.ipuls.se/www/_public/pub_course.cfm?CourseId=1010];
- (T 9) Lecturer at many national and international congresses (see below)
- (T 10) Reviewer of the Doctoral Thesis "Intracellular Calcium, Preconditioning and Regulation of Cellular Respiration in heart" by Erkki Liimatta, University of Oulu, Finland (Acta Univ Oul D 1041, 2009) ISBN 978-951-42-6085-8
- (T 11) Supervisor of the Doctoral Thesis "Levosimendan: Studies on its mechanisms of action and beyond" by Petri Kaheinen, University of Helsinki, Finland (Helsinki University Press) ISBN 978-952-92-6140-6

TITLES AND MEDALS

- (O 1) Adjunct Professor in Medical Chemistry at the University of Helsinki (*docent i medicinsk kemi vid Helsingfors universitet*) from June, 30th, 1994 (<http://en.wikipedia.org/wiki/Docent>)

(O 2) Knight of the Star of Italy, in 2006 (by the President of the Italian Republic, On. G.Napolitano)
(http://www.quirinale.it/qnrw/statico/onorificenze/insegne/insegne_stella_solidariet.htm)

(O 3) Medal of Merit of the Finnish National Chamber of Commerce for 20 years of work in the Industry, 2012 (http://www.keskuskauppakamari.fi/site_eng/Services/Medals-of-Merit)

(O 4) Knight (I grade) of the Lion of Finland, in 2011 (by the President of the Finnish Republic, On. T.Halonen) (<http://www.ritarikunnat.fi/se/utmarkelsetecken/lejons.html>)

(O 5) Fellow of the European Society of Cardiology (FESC), from November 2013

(O 6) Fellow of the Heart Failure Association (FHFA), from November 2017

SPECIAL TASKS

(S 1) Member of the board of various TEKES projects on behalf of Orion Pharma. Among others, the "Fukoosin ja fukoosia sisältävän polymeerin biotekninen tuotto" project with Teknillinen korkeakoulu, Bioprosessiteknikka (1999-2003); and the "KOHDEPROTEIINEIHIN SITOUTUVIEN MOLEKYYYLIEN NMR-SEULONTAMENETELMIEN KEHITTÄMINEN" project (tutkimusrahoitus päätös nro 40601/01 Drug2000) with VTT/HY (2001-2003/2004-2006).

(S 2) Independent expert EX2002B015064 for the evaluation of research proposals in the FP6-2002-LIFESCIHEALTH project of European Cordis (Life sciences, genomic and biotechnology for health) #1.2.1-1, on May 2003, and on January 2004. FP6-“Marie Curie”-project reviewer in 2005-7.

(S 3) Member of the Editorial Board of Journal of Cardiovascular Pharmacology (from 2004); occasionally reviewer/assessor for Biophys J, Acta Anaesth Scand, Br J Anaesthesia

(S 4) Independent evaluator in the REDES 2006 National Programme of Cooperative Research from the Spanish Ministry of Health and Consumer's Affairs.

(S5) Independent evaluator in the “Operational Programme Research and Development for Innovation” in 2010 for the Ministry of Education, Youth and Sports of the Czech Republic

(S6) Member of the Translational Research Committee of the Heart Failure Association within the European Society of Cardiology (from Sept 2012 to Aug 2016, and from Oct 2020 onwards)

(S7) Member of the Cardiovascular Pharmacology Working Group of the European Society of Cardiology (from Feb 2015)

(S8) Member of the Industrial Liaison Committee of the European Society of Cardiology (from May 31, 2017)

RESEARCH PUBLICATIONS

The complete list of scientific reports is divided into

- (a) full papers,
- (b) chapters in books
- (c) scientific communications to congresses.

(a) Full papers

Harzin's PoP indexes: h-index=49, g-index=81. An asterisk (*) indicates publications not yet cited in MedLine/PubMed, but cited in Embase/Biosys).

(P 1) de Bernard, B., Lunazzi, G.C., Martinuzzi, P., Modricky, C., Moro, L., Panfili, E., Pollesello, P., Stagni, N., Vittur, F., Bonucci, E., Bianco, P. and Costantini, M. (1986) Biochemical and immuno-histochemical evidence that cartilage alkaline phosphatase is a Ca^{2+} -binding glycoprotein. *The Journal of Cell Biology* 103:1615-1623.

(P 2) Vittur, F., Pollesello, P., Figueras, T. and de Bernard, B. (1988) Effect of polyamines on cultured chondrocytes and ROS 17/2.8. *Bullettin of Molecular Biology and Medicine* 13:33-43.*

(P 3) Gazzarrini, C., Stagni, N., Pollesello, P., D'Andrea, P. and de Bernard, B. (1989) Possible mechanism of inhibition of cartilage alkaline phosphatase by insulin. *Acta Diabetologica Latina* 26:321-327.

(P 4) Pollesello, P., D'Andrea, P., Martina, M., de Bernard, B. and Vittur, F. (1990) Modification of plasma membrane of differentiating preosseous chondrocytes: evidence for a degradative process in the mechanism of matrix vesicles formation. *Experimental Cell Research* 188:214-218.

(P 5) Pollesello, P., Eriksson, O., Kvam, B.J., Paoletti, S. and Saris, N.-E. L. (1991) ^1H -NMR studies of lipid extracts of rat liver mitochondria. *Biochemical Biophysical Research Communication* 179:904-911.

(P 6) Pollesello, P., de Bernard, B., Grandolfo, M., Vittur, F., Paoletti, S. and Kvam, B.J. (1991) Energy state of chondrocytes assessed by ^{31}P -NMR studies of preosseous cartilage. *Biochemical Biophysical Research Communication* 180:216-222.

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(P 8) Pollesello, P., Toffanin, R., Murano, E., Rizzo, R., Paoletti, S. and Kvam, B.J. (1992) ^1H - and ^{13}C -NMR studies of lipid extracts of the red alga *Gracilaria Longa*. *Journal of Applied Phycology* 4:149-155.*

(P 9) Eriksson, O., Pollesello, P. and Saris, N.-E. L. (1992) Inhibition of lipid peroxidation in isolated rat liver mitochondria by the general anaesthetic Propofol. *Biochemical Pharmacology* 44:391-393.

(P 10) Pollesello, P., Toffanin, R., Murano, E., Paoletti, S., Rizzo, R. and Kvam, B.J. (1992) Lipid extracts from different algal species: ^1H - and ^{13}C -NMR spectroscopic studies as a new tool to screen differences in the composition of fatty acids, sterols and carotenoids. *Journal of Applied Phycology* 4:315-322.*

(P 11) Pollesello, P., Toffanin, R., Eriksson, O., Kilpeläinen, I., Hynninen, H.P., Paoletti, S. and Saris N.-L.E. (1993) Analysis of lipid in crude extracts by ^{13}C -NMR *Analytical Biochemistry* 214:238-244.

(P 12) Pollesello, P., Masutti, F., Crocè, L.S., Toffanin, R., Eriksson, O., Paoletti, S., Höckerstedt, K. and Tiribelli, C. (1993) ^1H -NMR spectroscopic studies of lipid extracts from human fatty liver. *Biochemical Biophysical Research Communications* 192:1217-1222.

- (P 13) Vittur, F., Grandolfo, M., Fragonas, E., Godeas, C., Paoletti, S., Pollesello, P., Kvam, B.J., Starc, T., Mozrzymas, J.W., Martina, M. and de Bernard, B. (1994) Energy metabolism, replicative ability, intracellular calcium concentration and ionic channels of horse articular chondrocytes. *Experimental Cell Research* 210:130-136.
- (P 14) Kvam, C., Granese, D., Flaibani, A., Pollesello, P. and Paoletti, S. (1993) Hyaluronan can be protected from free-radical depolymerization by 2,6-diisopropylphenol, a novel radical scavenger. *Biochemical Biophysical Research Communications* 193:927-933.
- (P 15) Eriksson, O., Pollesello, P. and Saris, N.-E. L. (1994) Effect of phenylephrine on the compartmentation of inorganic phosphate in perfused rat liver during gluconeogenesis and urea synthesis - a ^{31}P -NMR study. *Biochemical Journal* 298:17-21.
- (P 16) Pollesello, P., Eriksson, O. and Saris, N.-E. L. (1994) Correlation between phosphorylation potential and mechanical function of guinea pig heart during reperfusion after ischemia. *Annals of New York Academy of Science* 723:495-502.
- (P 17) Pollesello, P., Ovaska, M., Kaivola, J., Tilgmann, C., Lundström, K., Kalkkinen, N., Ulmanen, I., Nissinen, E. and Taskinen, J. (1994) Binding of a new Ca^{2+} -sensitizer, levosimendan, to cardiac troponin c: a fluorescence probe and proton nuclear magnetic resonance study. *J. Biol. Chem.* 269:28584-28590.
- (P 18) Longo, R., Pollesello, P., Ricci, C., Masutti, F., Kvam, B.J., Bercich, L., Crocè, L.S., Grigolato, P.G., Paoletti, S., de Bernard, B., Tiribelli, C. and Dalla Palma, L. (1995) Proton MR spectroscopy in quantitative in vivo determination of fat content in human liver steatosis. *Magn. Reson. Imaging* 5:281-285.
- (P 19) Kvam, B.J., Fragonas, E., Degrassi, A., Kvam, C., Matulova, M., Pollesello, P., Zanetti, F. and Vittur, F. (1995) Oxygen derived free radicals action on hyaluronan, on two hyaluronan-ester derivatives and on the metabolism of articular chondrocytes. *Exp. Cell. Res* 218:79-86.
- (P 20) Pollesello, P., Eriksson, O., Geimonen, E., Vittur, F., Paoletti, S. and Toffanin, R. (1995) Detection and quantitation of phosphorus metabolites in crude tissue extracts by ^1H - and ^{31}P -NMR: use of gradient assisted ^1H - ^{31}P HMQC experiments for the assignment of less abundant metabolites. *NMR Biomed* 8:190-196.
- (P 21) Pollesello, P., Höckerstett, K. and Eriksson, O. (1996) Analysis of total lipid extracts from human liver by ^{13}C - and ^1H -NMR spectroscopy. *Analytical Biochemistry* 236:41-48.
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- (P 24) Flores-Diaz, M., Alape-Giron, A., Persson, B., Pollesello, P., Moos, M., von Eichel-Streiber, C., Thelestam, M., Florin, I. (1997) Cellular UDP-glucose deficiency caused by a point mutation which substitutes a conserved glycine un UDP-glucose pyrophosphatase. *J. Biol. Chem.* 272:23784-23791.

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- (P 36) Sorsa, T., Heikkinen, S., Abbott, M.B., Abusamhadneh, E., Laakso, T., Tilgmann, C., Serimaa, R., Annila, A., Rosevear, P.R., Drakenberg, T., Pollesello, P., Ilkka Kilpeläinen, I. (2001) Binding of Levosimendan, a Calcium Sensitizer, to Cardiac Troponin C. *J.Biol.Chem.* 276(12):9337-9343.
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- (P 42) Sorsa, T., Pollesello, P., Permi, P., Drakenberg, T., Kilpeläinen, I. (2003) Interaction of levosimendan with cardiac troponin C in presence of cardiac troponin I peptides. *J. Mol. Cell. Cardiol.* 35(9):1055-61.
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- (P 48) Sorsa T., Pollesello, P., and Solaro J.R. (2004). The contractile apparatus as a target for drugs against heart failure: interaction of levosimendan, a calcium sensitiser, with cardiac Troponin C. *Molecular and Cellular Biochemistry* 266: 87-107.
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- (P 51) Cescutti P., Kallioinen A., Impallomeni G., Toffanin R., Pollesello P., Leisola M., Eerikäinen T. (2005) Structure of the Exopolysaccharide produced by *Enterobacter Amnigenus*. Carbohydr. Res. 340(3):439-447.
- (P 52) Papp Z., Csapó K., Pollesello P., Haikala H., and Édes I. (2005) Pharmacological mechanisms contributing to the clinical efficacy of levosimendan. Cardiovasc. Drug Rev. 23(1):71-98.
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PATENTS

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- (PA 2) and (PA 3) Pollesello, P., Ovaska, M., Tenhunen, J., Vidgren, J., Yliperttula-Ikonen, M., Tilgmann, C., Lotta, T., Kaivola, J., "Compounds for deactivating phospholamban function on Ca-ATPase (phospholamban inhibitors)". U.S. Patent No.6,538,022 Mar 25, 2003; and U.S. Patent No. 6,774,103 Aug 10, 2004. Abstract: This invention relates to determining the three-dimensional structure of the cytosolic domain of phospholamban (PLB) and its active site from NMR data of sufficiently high resolution for the three-dimensional structure determination. The invention also relates to methods for rational drug design enabling the design of phospholamban inhibitors based on using the three-dimensional structure data provided on computer readable media, as analyzed on a computer system having suitable computer algorithms. The invention also relates to phospholamban inhibiting compounds with certain structural, physicochemical and spatial characteristics that allow for the interaction of said compounds with specific residues of the active site of phospholamban.
- (PA 4) Haikala, H., Pollesello, P., Kaivola, J., Levijoki, J. "Use of a pyridazinone derivative as a calcium sensitizer". European Patent No.1,087,769 B1, Mar 10, 2004. US patent No.5,905,078 May 18, 1999 and RE38,102 Apr 29, 2003. Abstract: A method for the treatment of neurohumoral imbalance caused by alterations of cardiac function to prevent the development of heart failure comprises administering an effective amount of (R)-[4-(1,4,5,6-tetrahydro-6-oxo-3-pyridazinyl)phenyl]acetamide to a mammal in need of such treatment.
- (PA 5) Haikala, H., Pollesello, P. "A new use of a pyridazinone derivative". International Patent Application WO 2002/040026 Abstract: The invention relates to the new use of the (+)-enantiomer of [[4-(1,4,5,6-tetrahydro-4-methyl-6-oxo-3-pyridazinyl)phenyl]hydrazono]propanedinitrile (dextrosimendan) or a pharmaceutically acceptable salt thereof in the manufacture of a medicament for inducing cardioprotective preconditioning by opening mitochondrial K_{ATP} channels.
- (PA 6) Koskelainen, T., Otsomaa, L., Rasku, S., Levijoki J., Karjalainen, A., Pollesello, P. "Pyridine derivatives useful for inhibiting sodium/calcium exchange system". International Patent Application WO 2004/063191 Abstract: Therapeutically active compounds of formula (I) or (II) are potent inhibitors of $\text{Na}^+/\text{Ca}^{2+}$ exchange mechanism.
- (PA 7) Haikala, H., Kaheinen, P., Levijoki, J., Pollesello, P., Mervaala, E. "A method for the treatment or prevention of cardiac hypertrophy". Finnish Patent Application No. 20040675, International Patent Application WO 2005/107756, Publication date: 17.11.2005, Priority date: 12.05.2004.
- (PA 8) Haikala, H., Levijoki, J., Pollesello, P., Tilgmann, C. "A method for the prevention of thromboembolic disorders". Finnish Patent Application No. 20040674; International Patent Application WO 2005/107757, Publication date: 17.11.2005, Priority date: 12.05.2004. USA Patent 8,017,609 September 13, 2011
- (PA 9) Pollesello, P. and Lilleberg J. International Patent Application WO 2006/097570 "A Combination Treatment for Enhancing Diuresis" Orion Corporation, Publication date: 21.09.2006, Priority date: 14.03.2005.

WORKS IN PROGRESS

- (W1) Papp Z, Pollesello P, Rich S, Burkhof D. Levosimendan-induced venodilation is mediated by potassium channel opening. (submitted to Int J Cardiol)
- (W2) Hu XQ, Kong WQ, Hua BT, Fedele F, Farmakis D, Pollesello P. Real world experience on the use of SIMDAX in Acute Heart Failure: a comparison between Europe and China. (submitted to Med Sci Monitor)
- (W3) Masarone D, Melillo E, Errigo V, Pollesello P, Petraio A, Pacileo G. Haemodynamic Effects of Pulsed Infusion of Levosimendan in Outpatients with Advanced Heart Failure: An Echocardiographic Study. (submitted to Drug, Design , Development and Therapy)

PARTECIPATION AT MEETINGS, CONFERENCES, CONGRESSES, COURSES

(A=with poster presentation; B=with oral presentation; C=as a lecturer or invited speaker; D=as a member of the scientific or organizing committee, E=as sponsor/organizer of scientific and/or marketing events)

(1) International meetings, conferences, congresses, courses:

- Alpe-Adria Regional Meeting of Biochemists, Biophysicists and Biotechnologists (Ljubliana, YU, 1985, A)
- Italy-USA Joint Meeting on Advances in Orthopaedic Surgery and Traumatology (Pavia, I, 1986)
- Alpe-Adria Regional Meeting of Biochemists, Biophysicists and Biotechnologists (Graz, A, 1987, A)
- XX European Symposium on Calcified Tissues (Sirmione del Garda, I, 1987, A)
- Annual Meeting of the Federation of European Biochemical Societies (FEBS) (Rome, I, 1989, A)
- Annual Meeting of the Federation of European Biochemical Societies (FEBS) (Budapest, H, 1990)
- European Congress of NMR in Medicine and Biology (Strasburg, F, 1990)
- III International Conference on "Applications of Physics in Medicine and Biology" at the International Centre for Theoretical Physics (UNESCO) (Trieste, I, 1990)
- Theoretical course "Marine Microbiology and Biochemistry" at the International Centre for Genetic Engineering and Biotechnology (UNESCO) (Trieste, I, 1991, C)
- Congress of the Society for Medicinal Plant Research (Trieste, I, 1992, B)
- European Bioenergetic Conference (Helsinki, FIN, 1992)
- III European Course of Cellular Pathology (Lyon, F, 1992)
- 12th European Experimental NMR Congress (Oulu, FIN, 1994, A)
- European Research Conference "NMR in Molecular Biology" organized by the European Science Foundation (Wildbad Kreuth, München, D, 1995)
- World Congress of the Int. College of Angiology (Helsinki, FIN, 1995, C)
- XVII International Conference on Magnetic Resonance in Biological Systems (Keystone, Colorado, USA, 1996, A)
- VII European conference on the spectroscopy of biological molecules, ECSBM'97 (Madrid, E, 1997, A)
- Cardiac Sarcoplasmic Reticulum Function and Regulation of Contractility - A New York Academy of Science Meeting (Washington, DC, USA, Sept 27-30, 1997)
- XVIII International Conference on Magnetic Resonance in Biological Systems (Tokio, Japan, 1998, A)
- LXXI Scientific Session of the American Heart Association (Dallas, Texas, USA, 1998)
- 21st Annual Scientific Meeting of the International Society for Heart Research (ISHR), American Section (San Diego, California, USA, June 9-12, 1999)
- "Lead Selection and Optimization" course [by *Vision in Business*] (London, UK, 1999)
- LXXII Scientific Session of the American Heart Association (Atlanta, Georgia, USA, 1999)
- Heart Failure Update (ESC) 2000 (Venice, Italy, 2000)

- LXXIII Scientific Session of the American Heart Association (New Orleans, Louisiana, USA, 2000)
- 67. Jahrestagung der Deutschen Gesellschaft für Kardiologie- Herz- und Kreislaufforschung (Mannheim, D, 2001, **A**)
- XVII World Congress of the International Society for Heart Research (ISHR), (Winnipeg, Manitoba, Canada, 2001)
- XXIII Congress of the European Society of Cardiology, (Stockholm, Sweden, 2001)
- Heart Failure 2002 (Oslo, Norway, 2002)
- 22nd European Section Meeting of the ISHR (Szeged, Hungary, 2002)
- Heart Failure Meeting of the European Society of Cardiology, joint with the 23rd European Section Meeting of the ISHR (Strasbourg, France, June 2003)
- 27th Congress of the Scandinavian Society of Anaesthesiology and Intensive Care Medicine. (Helsinki, Finland, 2003, **B**)
- 25th Congress of the European Society of Cardiology (ESC) (Vienna, Austria; 30. August - 03. September 2003)
- LXXIV Scientific Session of the American Heart Association (Orlando, Florida, USA, Nov 2003)
- 1st Acute Heart Failure Meeting “Definition, Causes and Therapeutic Options in AHF (Zürich, Switzerland; Feb 13-14, 2004)
- 24th International Symposium on Intensive Care and Emergency Medicine (Brussel, Belgium, Mar 30- Apr 2, 2004)
- 1st Perioperative Heart Failure Meeting (Graz, Austria; April 23-24, 2004)
- Der Hauptstadtkongress für Anästhesiologie und Intensivtherapie (Berlin, Germany; May 6-8; 2004, **C**)
- Heart Failure Update Meeting of the European Society of Cardiology (Wroclaw, Poland; Jun 12-15, 2004, **B**)
- 26th Congress of the European Society of Cardiology (ESC) (München, Germany; Aug 29-Sept 2, 2004)
- 8th annual meeting of the Heart Failure Society of America (Toronto, Canada; Sept 12-15, 2004 **A**)
- A.P.I.C.E. 19th annual congress (Trieste, Italy; Nov 12-14, 2004)
- Heart Failure Meeting of the European Society of Cardiology (Lisboa, Portugal; Jun 9-14, 2005)
- 27th Congress of the European Society of Cardiology (ESC) (Stockholm, Sweden; Sept 3-7, 2005)
- 9th annual meeting of the Heart Failure Society of America (Boca Raton, Florida, USA; Sept 18-21, 2005)
- 18th annual meeting of the European Society of Intensive Care Medicine (Amsterdam, Netherlands, Sept 26, 2005)
- 66th annual congress of the Italian Society of Cardiology (Rome, Italy, Dec 10-13, 2005, **C**)
- Heart Failure Meeting of the European Society of Cardiology (Helsinki, Finland; Jun 17-20, 2006, **A**)
- LXXVII Scientific Session of the American Heart Association (Chicago, Illinois, USA, Nov 11-15 2006)
- ESC educational program “latest advances in the treatment of patients with Acute Heart Failure” (Sophia Antipolis, Nice, France, March 15-16, 2007)
- Euroanaesthesia 2007 (Munich, Germany, June 9-11, 2007)
- 29th Congress of the European Society of Cardiology (ESC) (Wien, Austria; Sept 2-5, 2007)
- Heart Failure Meeting of the European Society of Cardiology (Milan, Italy; Jun 14-17, 2008)
- 5th International EDHF Symposium; Endothelium, Vasoactive Factors and Inflammation (Tampere, Finland June 24-27, 2008, **C**)
- The Annual Meeting of the American Society of Anesthesiologists (Orlando, Oct 18-22, 2008)
- The Veterinary Cardiovascular Society satellite meeting of BSAVA (Birmingham, Apr 1, 2009, **C**)

- Heart Failure Meeting of the European Society of Cardiology (Nice, France; May 30-Jun 2, 2009, A, E)
- 31st Congress of the European Society of Cardiology (ESC) (Barcelona, Spain; Aug 30-Sept 2, 2009)
- 6th Global Cardiovascular Clinical Trialists Forum (Paris, France 3-5 Dec, 2009, C)
- 30th congress of ISICEM (Brussels, Belgium, March 2010, E)
- Heart Failure Meeting of the European Society of Cardiology (Berlin, Germany; May/June 2010, E)
- Euroanaesthesia 2010 (Helsinki, Finland, June 11-14, 2010, E)
- 23rd ESICM annual meeting (Barcelona, Spain, Oct 10-14, 2011, E)
- 31st congress of ISICEM (Brussels, Belgium, March 2011, E)
- Heart Failure Meeting of the European Society of Cardiology (Gothenburg, Sweden; May 2011, E)
- 33st Congress of the European Society of Cardiology (ESC) (Paris; Aug 27-31, 2011)
- 24th ESICM annual meeting LIVES (Berlin, Germany, Oct 2-5, 2011, E)
- 32nd congress of ISICEM (Brussels, Belgium, March 2012, E)
- 34st Congress of the European Society of Cardiology (ESC) (Munich, Aug 25-29, 2012)
- EACTA meeting (Amsterdam, The Netherlands, September 2012, E)
- 25th ESICM annual meeting LIVES (Lisbon, Portugal, Oct 2-5, 2012, E)
- 33rd congress of ISICEM (Brussels, Belgium, March 2013, E)
- Heart Failure Meeting of the European Society of Cardiology (Lisbon, Portugal; May 2013, A, E)
- 36th Congress of the European Society of Cardiology (ESC) (Amsterdam; Sept 1-3, 2013)
- 26th ESICM annual meeting LIVES (Paris, France, Sept 31-Oct 3, 2013, E)
- 34th congress of ISICEM (Brussels, Belgium, March 2014, E)
- Heart Failure Meeting of the European Society of Cardiology (Athens, Greece; May 2014, E)
- 37th Congress of the European Society of Cardiology (ESC) (Barcelona; Aug 27-31, 2014)
- 26th ESICM annual meeting LIVES (Barcelona, Spain, Sept 31-Oct 1, 2014, E)
- 35th congress of ISICEM (Brussels, Belgium, March 2015, E)
- Heart Failure Meeting of the European Society of Cardiology (Seville, Spain; May 2015, E)
- 27th ESICM annual meeting LIVES (Berlin, Germany, Oct 4-7, 2015, E)
- Acute Cardiovascular Care Association – annual congress (Vienna, Austria, Oct 16-19, 2015, E)
- Winter meeting of the ESC-Heart Failure Association (Les Diablerets, SWI, Jan 20-22, 2016, C)
- 36th congress of ISICEM (Brussels, Belgium, March 2016, E)
- EACTA meeting (Basel, Switzerland, May 2016, E)
- Heart Failure Meeting of the European Society of Cardiology (Florence, Italy; May 2017, E)
- 28th ESICM annual meeting LIVES (Milan, Italy, Oct 2-5, 2016, E)
- 37th congress of ISICEM (Brussels, Belgium, March 2017, E)
- EACTA meeting (Berlin, Germany, April 2017, E)
- Heart Failure Meeting of the European Society of Cardiology (Paris, France; April-May 2017, E)
- 39st Congress of the European Society of Cardiology (ESC) (Barcelona, Aug 26-30, 2017, E)
- 29th ESICM annual meeting LIVES (Vienna, Austria, Sept 24-27, 2017, E).
- 6th Cardiovascular Research Days (Debrecen, Hungary, March 1-3, 2018, C).
- 38th congress of ISICEM (Brussels, Belgium, March 2018, E)
- Heart Failure Meeting of the European Society of Cardiology (Vienna, Austria; May 2018, E)
- 40th Congress of the European Society of Cardiology (ESC) (Munich, Aug 25-29, 2018, E)
- EACTA meeting (Manchester, UK, Sept 2018, E)
- 30th ESICM annual meeting - LIVES (Paris, France, Oct 21-24, 2018, E)
- 39th congress of ISICEM (Brussels, Belgium, March 2018, E)
- Heart Failure Meeting of the European Society of Cardiology (Athens, Greece; May 2019, E)
- 41st Congress of the European Society of Cardiology (ESC) (Paris, Aug 30-Sept 3, 2019, E)
- EACTA meeting (Ghent, B, 3-5 Sept 2019, E)

- 31st ESICM annual meeting - LIVES (Berlin, Germany, Sept 30-Oct 3, 2019, **E**)
- Heart Failure Meeting of the European Society of Cardiology (digital; June 2020, **E**)
- 32nd ESICM annual meeting - LIVES (digital; Dec 8, 2020, **E**)
- HFA Winter Meeting (digital, January 20-21, 2021)
- ACVC digital congress March 13-14, 2021 **E**

(2) National meetings, conferences, congresses, courses:

- Annual national congress of the Italian Biochemical Society (Isola d'Ischia, Napoli, I, 1984, **A**)
- Italian congress on "High performance Liquid Chromatography in Clinical Chemistry: Results and Perspectives" (Verona, I, 1985, **B**)
- Semiannual meetings of the Group "Calcified Tissues" of the CNR, Italy (from 1986 to 1992)
- II Practical Course on "Methodologies for protein research" (Vico Equense, Napoli, I, 1986)
- Annual meetings of the Group "Glycoconjugates" of the Italian Biochemical Society (from 1987 to 1991)
- Annual national congress of the Italian Biochemical Society (Brescia, I., 1987, **A**)
- Annual national congress of the Italian Biochemical Society (Padova, I, 1988, **A**)
- Course on "NMR in Molecular Genetic and Biotechnology" at the International School for Advanced Studies (Trieste, I, 1989)
- 5th Lecture Course on "Biophysics and Molecular Biology: Molecular Mechanisms of intracellular targeting and sorting" of the Italian Society of Biophysics and Molecular Biology (Trieste, I, 1989)
- II National Congress of the candidates as Philosophiae Doctor in Biochemistry (Brallo di Pregola, Pavia, I, 1989, **B**)
- XVI National Congress of the Italian Group of Bioenergetic and Biomembranes (G.I.B.B.) (Parma, I, 1989, **B**)
- Congress of the Italian Society of Clinical Biochemistry (Grado, Gorizia, I, 1991, **A**)
- Annual national congress of the Italian Biochemical Society (Ferrara, I, 1991, **A**)
- II Joint meeting on Carbohydrates - SCI, SIB (Grado, I, 1992)
- XV Finnish national NMR symposium (Turku, FIN, 1993, **A**)
- Annual national congress of the Italian Biochemical Society (Trieste, I, 1993, **A, B**)
- Course "Analysis of Lipids" of the Program of Educational Network in Biotechnology (Helsinki, FIN, 1993, **C**)
- Course "Introduction to NMR" of the Program of Educational Network in Biotechnology (Helsinki, FIN, 1993, **C**)
- 25th Italian NMR congress (GDRM) (Trieste, I, 1994, **A, B, D**)
- Bioscience Days, Helsinki, FIN (1995 and 1996)
- BIOSYM Life Science Workshop - Molecular Modelling (Helsinki, FIN, 1996)
- XIX Finnish national NMR symposium, (Keuru-Jyväskylä, FIN, 1997, **A, B**).
- Nordic Bruker NMR user meetings (Stockholm, 1994, Helsinki, 1997, **B**).
- Biophysical and Structural Methods in Analysis of Protein-Ligand Interactions (Helsinki, 1998)
- Minisymposium on Structural Biology and Biophysics, Institute of Biotechnology at Viikki (Helsinki, 1998)
- Svensk Thoraxkirurgisk förening och Svensk förening för Thoraxanestesi och Thoraxintensivvård. Årsmöte. (Lund, Sverige, 2000, **C**).
- Meeting of the Swedish Society for Anaesthesia and Intensive Care (Lund-Sverige, 2001, **C**).
- Nordic NMR Symposium - 23rd Finnish NMR Symposium. (Helsinki, Finland, 2001, **A**)
- Biotech Helsinki 03 (Helsinki, Finland, 2003)
- XVII Helsinki University - Congress of Drug Research (Helsinki, Finland, 2003)
- LXVI Congresso Nazionale della Società Italiana di Cardiologia (Rome, 10-13 Dec 2005, **C**)
- Annual Congress of the ANMCO (Associazione Nazionale Medici Cardiologi Ospedalieri). (Florence, Italy, June 4-7, 2009)

- 25. Herbsttreffen des wissenschaftl. Arbeitskreises Kardioanästhesie der DGAI (Deutsche Gesellschaft für Anästhesiologie und Intensivmedizin; Fulda, Germany, Nov 25-27, 2011, C)

ORGANIZATION OF SCIENTIFIC, MEDICAL & MARKETING EVENTS AT CONGRESSES

- ESC-HF 2006, Helsinki, Finland: levosimendan lecture&lunch at Orion HQ (Algotsson, Papp, Pollesello, Mervaala, 120 attendees).
- Dexmedetomidine-Advisory Board meetings (7 events from 2006 to 2010), various dates, locations, attendees. Audio recordings and transcriptions available
- ESC-HF 2009, Nice, France: booth and “meet the expert at the booth” events (Mebazaa, Parissis, Nieminen, Follath).
- ESC annual meeting 2009, Barcelona, Spain: levosimendan lecture&dinner (Nieminen, Lahtinen, Follath, Harjola, Comin-Colet, 50 guests).
- Consensus meetings on “Levosimendan pharmaco-economics”, 2009, Milano/Rome, Italy: 5 attendees.
- ISICEM 2010, Brussels, Belgium: booth and sedation satellite symposium (Tonner, Singer, Mantz, Longrois, Salanterä, 250 attendees). Video recording available.
- ESC-HF 2010, Berlin, Germany: booth and “meet the expert at the booth” events (Mebazaa, Follath, Altenberger).
- ESA 2010, Helsinki, Finland: booth, sedation satellite symposium (Jalonen, Takala, Sladen, Yli-Hankala, Vincent, 400 attendees), and levosimendan lunch&lecture at Orion HQ (Fruhwald, Lindgren, Lantinen, Pollesello, 140 attendees). Video recordings available
- Consensus meeting on “Levosimendan Mode of Action” 2010, Stockholm, Sweden (aside ESC annual meeting): 25 attendees, consensus published as full paper.
- ESICM-LIVES 2010, Barcelona, Spain: booth, sedation satellite symposium (Singer, Pandaripande, Mantz, Takala, Sladen, Aantaa, 350 attendees) and lecture&dinner (Garraath, Tonner, Aantaa, Pandaripande, Sladen, and 70 other attendees from all Orion regions). Video, Audio recordings, and transcriptions available.
- ISICEM 2011, Brussels, Belgium: booth & dexmedetomidine satellite symposium (Takala, Ruokonen, Jakob, Riker, 400 attendees).
- ESC-HF 2011, Gothenburg, Sweden: booth and “The levosimendan lecture” (Nieminen, Fedele, Parissis, Kvidahl, 120 attendees), video available.
- Consensus meeting on “Levosimendan in cardiac surgery”, 2011, Vienna, Austria (aside the EACTA annual meeting): 20 attendees.
- ESICM-LIVES 2011, Berlin, Germany: booth and Critical Care Satellite Symposium (Singer, Mantz, Toller, Pandharipande, 400 attendees). Video available.
- ISICEM 2012, Brussels, Belgium: booth
- “The levosimendan lecture”, Belgrade, Serbia (May 21, 2012) (Nieminen, Mebazaa, Landoni, Papp, 70 attendees)
- Consensus meeting on “Renal Effects of Levosimendan”, Oct 24 2012, Munich, Germany: 25 attendees.
- ISICEM 2013, Brussels, Belgium: booth/symposium (Longrois, Fruhwald, Mantz, Sladen, 380 att.)
- ESC-HF 2013, Lisbon, Portugal: booth and “The levosimendan lecture”(May 27, 2013) (Nieminen, Mebazaa, Parissis, Andersen, 120 attendees)
- Consensus meeting on “Repetitive use of Levosimendan in Advanced Heart Failure”, Oct 17 2013, Munich, Germany: 30 attendees.
- ISICEM 2014, Brussels, Belgium: Satellite Symposium on ICU care (Gordon, Fruhwald, et al, March 19, 350 attendees), Speakers’ corner short interactive lectures at the booth (Landoni, de Hert, Heunks, Morelli, march 18-21, 10-15 attendees each).

- Consensus meeting on “Pre-operative use of Levosimendan in Cardiac Surgery”, March 28, 2014, Munich, Germany: 30 attendees.
- ESC-HF 2014, Athens, Greece: booth and “The levosimendan lecture”(May 19, 2014) (Nieminen, Altenberger, Parissis, Comin-Colet, 120 attendees)
- Consensus meeting on “The patient perspective: quality of life in heart failure with frequent hospitalisations”, January 27, 2015 Munich, Germany: 34 attendees.
- ISICEM 2015, Brussels, Belgium: Satellite Symposium on ICU care (Toller, Guarracino, et al, March 17, 350 attendees), Speakers’ corner short interactive lectures at the booth (Mebazaa, de Hert, Toller, Guarracino, march 16-19, 10-15 attendees each).
- ESC-HF 2015, Seville, Spain: booth and satellite symposium “The patient perspective: effects of levosimendan on hemodynamics and quality of life” (Nieminen, Follath, Ruschitzka, Mebazaa, Parissis, and Agostoni), May 26, 2015; 200 attendees)
- Consensus meeting on “Pharmaco-economics of levosimendan in cardiology”, May 27, 2015 Seville, Spain: 10 attendees.
- Consensus meeting on “Role of levosimendan in acute heart failure complicating acute coronary syndrome ”, January 22, 2016 Munich, Germany: 30 attendees.
- Consensus meeting on “Levosimendan: beyond inotropy”, February 26-27, 2016 Athens, Greece: 30 attendees.
- ISICEM 2016, Brussels, Belgium: Satellite Symposium on ICU care (Guarracino, Gordon, Fruhwald, et al, March 16, 350 attendees), Speakers’ corner short interactive lectures at the booth (Mebazaa, Guarracino, Fruhwald, et al. March 15-19, 10-15 attendees each).
- EACTA 2016, Basel, Switzerland: Satellite Symposium on perioperative levosimendan use (Guarracino, Ricksten, Lomivorotov, Seeberger, Bettex, et al., May 13, 180 attendees).
- ESC-HF 2016, Florence, Italy: hands-on sessions on levosimendan in AdHF. 12 short HANDS-ON lectures (May 21-22, 15-25 attendees each).
- Consensus meeting on “Levosimendan: repetitive use in AdHF”, Nov 24-25, 2016 Rome, Italy: 30 attendees.
- ISICEM 2017, Brussels, Belgium: Satellite Symposium on ICU care (Guarracino, Bettex, et al, March 23, 350 attendees), Speakers’ corner short interactive lectures at the booth (Mebazaa, Guarracino, Bettex, Bouchert March 23-26, 10-15 attendees each).
- EACTA 2017, Berlin, Germany: Satellite Symposium on perioperative levosimendan use (Heringlake, Guarracino, Landoni, Ricksten, Cholley, et al., April 20, >200 attendees).
- ESC-HF 2017, Paris, France: hands-on sessions on levosimendan in AdHF. 24 short HANDS-ON lectures by 12 speakers (April 31- May 2, 15-25 attendees each).
- ESC 2017, Barcelona, Spain: hands-on sessions on the use of inodilators in AdHF. 28 short HANDS-ON lectures by 14 speakers (Aug 28-30, a total of 800 attendees).
- ESICM-LIVES 2017, Vienna, Austria: hands-on tutorial sessions on the use of levosimendan in ICU. 18 short HANDS-ON lectures by 11 speakers (Sept 26-27, a total of 200 attendees).
- ISICEM 2018, Brussels, Belgium: Satellite Symposium on ICU care (Heringlake, Ricksten March 21, 350 attendees), Speakers’ corner short interactive lectures at the booth (Guarracino, et al.)
- ESC-HF 2018, Vienna, Austria: hands-on sessions on levosimendan in AdHF. 24 short HANDS-ON lectures by 12 speakers (May 27- 28, 20-40 attendees each).
- ESC 2018, Munich, Germany: hands-on sessions on levosimendan in AHF and AdHF. 30 HANDS-ON lectures by 17 speakers (Aug 26-28, 40 attendees each).
- EACTA meeting 2018, Manchester, UK (Sept 19, symposium with 80 attendees) Heringlake, Cholley, Bettex)
- Consensus meeting on “Inotropes in AHF and AdHF”, Oct 24-25, 2018, Athens, Greece: 35 attendees.
- 30th ESICM annual meeting - LIVES (Paris, France, Sept 27-28, 2018) 16 HANDS-ON lectures by 8 speakers (15 attendees each, in average).

- 39th ISICEM annual congress 2019, Brussels, Belgium: Satellite Symposium on ICU care (Heringlake, Ricksten, March 20, 350 attendees), Speakers' corner short interactive lectures at the booth (Guarracino, Herpain, Heringlake).
- ESC-HF 2019, Athens, Greece: hands-on sessions on levosimendan in AdHF. 24 short HANDS-ON lectures by 12 speakers from 9 countries (May 27- 28, 15-45 attendees each).
- ESC 2019, Paris, France: debate symposium on levosimendan in AHF and AdHF (Aug 31, 200 attendees) Parissis, Fedele, Gustafsson, Harjola, Pözl, Comin-Colet, Agostoni, Tschoepe.
- EACTA meeting 2019, Ghent, Belgium (Sept 3, symposium with 150 attendees) Heringlake, Toller, Bouchez, Rex, Paternoster, Lannemyr, Treskatsch, Guarracino, Bettex, Gaudard, Wouters.
- 31st ESICM annual meeting - LIVES (Berlin, Germany, Oct 3, 2019) Lunch symposium (Tschöpe and Antonelli, Chairs) with 4 lectures by Herpain, Rickstein, Treskatsch, and Girardis (370 attendees at the beginning of the session).
- ACCA congress (Athens, Greece, March 7-9, 2020) Lunch symposium (Masip and Parissis, Chairs) with 4 lectures by Farmakis, Guarracino, Zima, and Varppula. CANCELED
- ESC-HF 2020 WEB-based congress "HFA Discoveries": educational sessions on levosimendan in AHF and AdHF. 3 short lectures by G.Pözl, Z.Papp, J.Parissis, B.Vertovc (June 10, 850 registered attendees).
- 32nd ESICM annual meeting - LIVES (digital satellite symposium; Dec 8, 2020, Guarracino, Herpain, Heringlake, Girardis, 330 registered attendees)
- ACVC congress (digital, March 13-14, 2021) Satellite symposium (Parissis, Chair) with 3 lectures by Farmakis, Guarracino, Zima, 330 attendees.

OTHER INTERESTS

- Active as a **translator and writer**. Pollesello translated E.Södergran's book "*Dikter*", POESIA (Crocetti Ed., Milano. It) **105**: 20-24 (1997), and selected works of J.L.Runeberg and H.Gullberg, Settemtrione-Nuova Serie-Rivista di studi italo-finlandesi (ISSN 1237-9964) **12**: 238-248 (2000). A selection of translations of Scandinavian poetry by Pollesello can be found in his books "*Poesie dal Nord*", 2008, Koptotaito kirjap. (ISBN 978-952-92-4346-4) and "*Poesie dal Nord – libro secondo*", 2011 (ISBN 978-952-93-0050-1). Pollesello has been consultant for the sections of biochemistry, medical chemistry and biotechnology of the Italian-Finnish Dictionary, Berggren O. et al., OTAVA, 2003 (ISBN 951-1-12499-4). Pollesello contributed to the translation of the book "*Look at Suomenlinna-Sveaborg: the island fortress off Helsinki*" by Olof af Hällström; [translation Heljä Mäntyranta, Esbjörn af Hällström, Piero Pollesello], 2nd. renewed ed., 2004, Vammalan kirjap. (ISBN 952-91-7378-4). Pollesello contributed with several translations to the book "*Ancora Imparo: raccolta di scritti in onore di Rolando Pieraccini per i suoi quarant'anni di buon lavoro in favore della cultura finlandese e italiana*" (R.Andronico, A.Parente & M.Viitasalo Eds.), The Pieraccini Foundation, Helsinki 2014. A short novel by Pollesello is published in "*Le 1000 storie degli Italiani nel Mondo*" a cura di Monica Palozzi (2010, Pragmata Ed. ISBN 978-88-903592-8-6). Two lyrics by Pollesello in Trieste-dialect are published among the winners of a poetry contest in the book "*La Seconda Gerla d'Argento (1978-2000)*" (G.Chiaradia, Ed.), Edizioni Propordenone, Pordenone, Italy, 2002.
- Formerly active in the **World Organization of the Scout Movement**. Wood-badger (Cub Master) and Group Leader (1979-1990). International Commissioner of the *C.N.G.E.I. - Boy Scouts of Italy* and member of the national board of the *Italian Scout Federation* (F.I.S.), 1986-1990; Assistant Leader Trainer, 1984-2000; Active in the Finnish Scout Organization *Suomenpartiolaiset* as Leader Trainer, member of the National Training Committee of the Finnish Scout Organization (Koulutusryhmä), 2000-2001, organized the national leader training camp INDABA in 2001.

- Active in the **Catholic Church**. Member of the *Franciscan Third Order*, O.F.S. from 1986; catechist for the Swedish speaking children in the Diocese of Helsinki, from 2002 to 2008; acting kantor/kanttori, from 2019 in the Parish of St.Mary, Helsinki.
- Active in several **musical ensembles**. He has been active in: *Polifonic choir Santa Maria Maggiore*, Trieste, from 1976 to 1991; *Chamber Choir of Kauniainen*, Kauniainen, from 1993 to 1996; *Oratoriekören*, Helsinki, in 1995-6; *Coro Sanctae Mariae*, Helsinki, from 1993; *Cappella Sanctae Mariae*, Helsinki, from 2020; *Espoo Motet Choir*, from 1995 to 2006; *KINGSROAD Band of Espoo School of Music*, from 2003 to 2009; *VALLMOBRASS ensamble*, Grankulla, from 2004; *Chamber Choir NOVENA of the Luteran Cathedral in Espoo*, Espoo, from 2010; *Chamber Choir VIVAVOX of the Luteran Cathedral in Helsinki*, Helsinki, from 2020. He organized various Italian musical tournée for CORO JUVENALIA (Grado, 1999), CORO FINLANDIA (Rome, 2001; Venice/Trento/Bolzano, 2003; and Firenze/Arezzo, 2007), NOVENA (Venice, 2013), and CORO JEAN SIBELIUS (Rome, 2016) often in coordination or under the patronage of the Italian Embassy in Finland.
- Active in local **politic and culture**. Member of SFP (Svenska Folkpartiet i Finland) from 2012. Member of the Culture Committee of the Municipality of Kauniainen/Grankulla, for the Svenska Folkpartiet (2013-7); Deputy member of the Social and Public Health Committee of the Municipality of Kauniainen/Grankulla, for Svenska Folkpartiet (2013-7); Deputy member of the Culture Committee of the Municipality of Kauniainen/Grankulla, for Svenska Folkpartiet (2017-2020); Candidate to the municipal election of Helsinki in 2021 for SFP. Member of SKH (Svenska Klubben i Helsingfors) from November 2013. Member of SLS (Svenska litteratursällskapet i Finland) from February 2014.
- Cooperated in 2011-2013 with “Sistema Italia in Finlandia”, a think-tank on innovation promoted by the **Italian Embassy** in Finland.