

# Angelika Görg, Joël Vandekerckhove and Pier-Giorgio Righetti, Honorary Members of the Spanish Proteomics Society



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The Spanish Proteomics Society (SEProt) is proud to announce the appointment as Honorary Members of Prof. Angelika Görg, Prof. Joël Vandekerckhove and Prof. Pier Giorgio Righetti for their eminent contributions in the field of proteomics.

Angelika Görg studied Biochemistry and Food Chemistry at the Universities of Tübingen and Stuttgart, receiving her Ph.D. degree from the Technical University of Munich, where she was appointed Professor in 1992 and Head of the Proteomics Group in 1999.

Angelika is a pioneer not only in the field of proteomics but also modern biosciences as evidenced by more than 200 scientific publications. 2D electrophoresis is as accessible to users as it is nowadays thanks to the efforts of her research group. Since 1982, Angelika and co-workers inspired the development of 2D electrophoresis technology with immobilized pH gradients (IPG) by introducing IPG strips cast on plastic backings. The key idea of cutting a gel plate to generate the IPG strips while dry (much easier than when wet) was a major contribution to the field and transformed 2D electrophoresis from a difficult art to good mastery, as is all protein biochemistry. An additional outstanding contribution was the introduction of the double equilibration of IPG strips prior the second dimension in the presence of SDS, urea, glycerol and DTT first, followed by iodoacetamide in the second step. This practice minimizes the problems of protein transference to the second dimension gel. This technology has been constantly refined and, combined with mass spectrometry, has become the basis for a vast amount of ongoing proteome projects worldwide. These advances have become a routine

practice in a plethora of laboratories, but, as Thierry Rabilloud stated in a recent tribute to Angelika, many people opening a pack of strips and making their routine 2D gels with what they think to be standard protocols do not imagine the amount of sweat, time and effort and dedication that was needed to make such a “simple” process.

Besides her research activities, Angelika put great effort into creating and developing educational programs to propagate proteomics technologies. She has been awarded by her outstanding scientific and technological contributions by different Societies and Institutions including the British and Japanese Electrophoresis Societies. In 2001 received the Heinz-Maier-Leibniz Medal of the Technisch Universität München and in 2004 received the HUPO Distinguished Achievement Award in Proteomics in recognition of her indispensable contributions to proteomic sciences.

Joël Vandekerckhove completed his studies in chemistry and obtained his Ph.D. in 1972 at the University of Ghent. He did a post-doctoral stint at the Max Planck Institute for Biophysical Chemistry in Göttingen (Klaus Weber, 1976-1981) as a Fellow of the Belgian National Science Fund. In 1989 he was appointed Professor in Biochemistry at the Department of Biochemistry of the Medical School in Ghent and in 1996 Scientific Director at the Flanders Institute of Biotechnology.

Joël Vandekerckhove contributed significantly to different scientific areas that included cell biology, plant biotechnology and proteomics and resulted in more than 550 scientific highly cited articles and 15 patents. As a trained protein-chemist, he started studying the molecular basis of the microfilament organization in animal cells and discovered the different isoforms of actin and several actin-binding proteins. On this way, he laid the basis for a vast research area important for the understanding of the formation and role of the actin cytoskeleton in normal and pathological conditions. During this work, he developed the electroblotting and micro-sequencing technology, which was one of the important tools in the pre-proteomic era. His research passed for a while in the plant sciences, where his experience in protein chemistry helped him in creating the first plants producing human bioactive peptides; an experiment which turned out to be the first example of molecular farming. His studies were fundamental for the creation of plants with improved nutritive value.

Protein chemistry and proteomics still remained his "pet" research themes. He consolidated a group of reference in proteomics whose seminal work lead to the development of methods to study selected peptide families by mass-spectrometry driven proteomic techniques. These are known globally as COmbined FRActional DIagonal Chromatography (COFRADIC), which allows specific sorting of a subset of peptides in

highly complex mixtures for targeted proteomics. The interesting aspect here is that selection can be completely directed towards the particular biological problem. Highlights in this research are the studies of protein cleavages and processing and of a variety of non-conventional post-translational modifications. This technique adds a new dimension to the tools in state-of-the-art proteomics and became one of the basic technologies used by a spin-off company called "Pronota" in a search for biomarkers.

Joël Vandekerckhove serves on the Scientific Advisory Committees of several international academic and public research organizations focusing on genomics and proteomics. In particular, the Spanish proteomics has had the enormous privilege of having Joël as a witness of exception, who importantly contributed to its consolidation. He is member of the editorial board of journals in the field of molecular biology and biochemistry and received the Edman award and the prize of the Royal Academy for Medicine of Belgium.

Pier-Giorgio Righetti studied chemistry at the University of Pavia and after obtaining his Ph.D. he spent 4 years at the MIT. He has been appointed Professor of Biochemistry at the Universities of Calabria, Verona and the Dipartimento di Chimica, Materiali ed Ingegneria Chimica "G. Natta" of the Politecnico de Milano.

Pier-Giorgio's research have spanned near the entire discipline of electrophoresis and its applications in different fields, which excellence has been recognized in more than 700 scientific contributions and 10 patents. Since 1970 he was involved with development of isoelectric focusing in soluble, amphoteric buffers, a method that was applied to a number of biomedical and clinical problems, such as thalassaemia screening. Then his development of immobilized pH gradients was a major contribution to resolve the limitations resulting from pH gradient stability. The resulting IPG were then used to obtain some of the pioneer maps from different human samples by 2D electrophoresis. The instrument developed by Pier-Giorgio and co-workers in the late eighties, for extreme purification of proteins based on the principle of trapping proteins between sets of amphoteric, buffering membranes, has been adopted for pre-fractionation in proteome analysis. In the 1990s he moved to the field of capillary zone electrophoresis developing new capillary coatings and devising temperature-dependent methods to screen for DNA point mutations. Coming back to proteomics, Pier-Giorgio gave us an additional proof of his cleverness by developing ProteoMiner, a protein enrichment technology used for the compression of the dynamic range of protein concentrations in complex biological samples based on the treatment with a large, highly diverse library of hexapeptides bound to chromatographic supports. In theory, each unique hexapeptide binds to a unique protein sequence. Combinatorial peptide ligand capture technology provides a

method for detecting medium or low abundance proteins in complex matrices.

Pier-Giorgio has received many awards in recognition of his outstanding contributions, including the California Separation Science Society award and the Csaba Horvath Medal award. Anyone who has met Pier-Giorgio will recognize a true Renaissance man with admiration and knowledge of all different cultural disciplines. This “DaVinci” personality is reflected in his articles and talks, making of them delicious and magister pieces of science.

The Spanish Proteomics Society is greatly honoured by these three unique scientists having accepted to become Honorary Members.

A handwritten signature in blue ink, appearing to read 'F. Corrales', with a stylized flourish at the end.

Fernando J. Corrales  
SEProt President