

Biography of Professor José A. Cabezas

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Professor José A. Cabezas Fernandez del Campo was born in Ledesma, Salamanca, Spain, in 1929 and at present he is retired from his Chair as Professor of Biochemistry and Molecular Biology at the Faculty of Biology of the University of Salamanca. He also has a degree in Clinical Biochemistry and he served for eleven years in the Spanish Army as a military pharmacist, now being retired as a Captain. His undergraduate, graduate and Ph.D. work was done at the Complutense University in Madrid from 1947 to 1959. After receiving his M.S. degree in Pharmacy carried out partially in Paris under the direction of Prof. J.E. Courtois and M. Leclerc in 1952, he joined the research group of Professor Angel Santos Ruiz at the Complutense University, Department of Biochemistry, where in 1956 he was awarded his Ph.D. degree in Biochemistry with the highest honours. In 1956 he became Associate Professor of Biochemistry at the Universidad Complutense in Madrid, where he started his work on sialic acid-containing

compounds. This topic always stimulated his interest, together with gangliosides and glycosidases, areas of research that he never abandoned until his retirement. Later, in 1959, he was appointed Full Professor of Biochemistry at the Universidad de Santiago de Compostela, Spain, where he was Chairman of the Department of Biochemistry from 1959 until 1969. That year he moved to the Faculty of Biology of the University of Salamanca, where he served as Full Professor at the Department of Biochemistry and Molecular Biology until his retirement in 2002, enjoying the position of Chairman from 1969 until 1984. During his early years dedicated to science, José A. Cabezas was an unusual Spanish post-doctoral scientist outside Spanish frontiers, since he spent that period *after* becoming Full Professor, using his vacation time and periods without teaching duties. During those times he worked at the laboratories of Prof. Leclerc and Courtois (Paris, France), Klenk and Faillard (Köln, Germany), Warren and Glick (Pennsylvania, USA) and G.B. Robinson (Oxford, UK) in 1960, 1962, 1966 and 1972, respectively. His scientific merits led Dr. Cabezas to be elected as permanent member of the Spanish Royal Academy of Pharmacy (Madrid) in 1990. He also served as Vice-Chancellor of Scientific Research at the University of Salamanca from 1984 to 1986. In 1990 he was awarded the Spanish “Castile & Leon Research Award” among Spanish scientists based on his excellence in scientific research and his contributions to the field of glycoconjugate research. Dr. Cabezas is Knight of the “Palmas Académiques” from the French Government (1976); member of the “Académie Nationale de Pharmacie” (Paris, France) and member of the “Academia de Ciencias Médicas” (Cordoba, Argentina).

In Spain, Prof. Cabezas has been a pioneer in the field of glycobiology. He began conducting research into this topic at a time when very few scientists in Spain, and indeed in the world, were paying attention to this extremely

important area of research. His pioneering work and leadership strongly influenced many of Spanish scientists who are now dedicated to this field. Dr. Cabezas' interest in the sialic acid-containing compounds started back in 1953 with his work on polarography and glycoproteins and years later he also focused on other topics pertaining to the glycoconjugate world, such as gangliosides and glycosidases (fucosidases, hexosaminidases, galactosidases and sialidases), placing special interest in viral sialidases over the past two decades. Several papers by his research team addressing hydrolases have been selected as key references by the Enzyme Commission of the International Union of Biochemistry for Enzyme Nomenclature (α -L-fucosidase, β -N-acetylhexosaminidase, sialidase, O-acetyltransferase, etc.). His work with viral sialidases focused on influenza viruses (A & B) and Newcastle disease virus. Their studies on influenza virus C acetyltransferase activity and influenza B virus sialidase activity on natural sialic acid-containing substrates (mainly glycoproteins) led Dr. Cabezas' group to propose that infection with influenza C virus would facilitate later infection by influenza A or B viruses, rendering natural hosts an easier and more accessible target by means of modifying their cell receptors. Dr. Cabezas proposed to the International Committee on Taxonomy of viruses that influenza C virus should be considered a new genus. His group also described that influenza A virus strains have the ability to adapt their biochemical activities to the hosts they infect, and that resistance to rimantadine does not influence the sialidase activity of influenza A viruses. Also, Dr. Cabezas suggested that the evolutionary pattern of the sialidase of influenza A and B viruses determines certain modifications that result in a higher efficiency for the sialidase of some strains of influenza virus type A, but maintaining a similar behaviour towards competitive inhibitors in both types of viruses. Dr. Cabezas was also interested in sialic acid-containing glycolipids: gangliosides. His group first determined the concentration and pattern in brain areas of several mammals. They then studied the changes produced in these compounds by the administration of drugs of abuse such as alcohol, cocaine and pentazocine. These changes were espe-

cially relevant in their livers, with inhibition of the enzyme GD3 synthase. The ganglioside composition of spleen lymphocytes was also studied by his group. Probably one of the most relevant merits of Prof. Cabezas has been his discovery of the presence and type of sialic acid (the Neu5Ac) in human tears, the occurrence of diacetylneuraminic acid in normal human urine and the absence of sialic acids in vegetable seeds. It was also important the fact that he was able to carry out scientific research work of huge repercussions with very simple instruments since he literally inaugurated Biochemistry laboratories, initially at the University of Santiago de Compostela in 1960 and later (1969) at the University of Salamanca. Professor José A. Cabezas and his co-workers have published over 200 papers and research articles in internationally recognized journals and books.

Professor Cabezas is an active member of several Scientific Societies around the world. He organized the XI European Latin Biochemical Conference in Salamanca in 1973 and has given guest lectures in many Biochemical and Glycoconjugate Conferences. Since the International Symposium on Glycoconjugates held in Lille (1973) organized by Prof. J. Montreuil, he has participated in all the symposia held every two years in different European cities, in Japan and in the USA, and he was the first Spanish representative of the International Glycoconjugate Organization (IGO) since its foundation in 1983 to 1999. Dr. Cabezas was the first Spanish participant in the study of the Biochemistry of Aging (EURAGE) in the European Community. Finally, he has published several monographs on historical topics, including (i) The negotiation of the Peace of Westphalia. In this negotiation, one of Prof. Cabezas' ancestors, Don Pedro Fernandez del Campo was an active participant in all negotiations. (ii) The Spanish war of succession in Salamanca (during the eighteenth Century), and (iii) The successional transition of 1832 in Spain. All these contain hitherto unpublished data.

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