

## *CURRICULUM VITAE*

### **Prof. Dr. Imre Zs.-Nagy**

(Full last name: Zsolnai-Nagy (abbreviated as: Zs.-Nagy). First name: Imre)

Born: Balassagyarmat, Hungary, 28. Oct. 1936.

Schools: elementary and high: Hajdúböszörmény, Hungary, exam of maturity: 1955.

#### University Studies:

University Medical School, Debrecen, (DOTE), Hungary, M.D. degree taken: 1961, with a special award called "Sub Auspiciis Rei Publicae Popularis" (for the best students).

#### Working places:

1960-63: DOTE, Institute of Anatomy, Debrecen: assistant professor.

1963-73: Institute of Biology of the Hungarian Academy of Sciences, Tihany: scientific coworker, 1968-73: vice-director.

1973-76: Dipartimento ai Ricerche Gerontologiche, Istituto Nazionale di Riposo e Cura per Anziani (INRCA) Ancona, Italy: director of the Center of Cytology: 1975-76: Scientific Coordinator of the Dipartimento di Ricerche Gerontologiche in Ancona.

1976-79: DOTE, Institute of Biology, Debrecen: scientific adviser, always in collaboration with the Dipartimento di Ricerche in Ancona, Italy.

1979-1996: DOTE, Hungarian Section of the "Verzár International Laboratory for Experimental Gerontology" (VILEG), Debrecen: Director of the Hungarian Section of VILEG and coordinating Secretary of VI LEG in international scientific cooperations. In 1985 obtained the title of "University Professor".

1 January 1997- 1 November 2001: Head of the Department of Gerontology, established DOTE, by transforming the VILEG Hungarian Section. From 1st of November, 2001 had to resign from this position because of having reached 65 years of age. By law, remained active worker, but not head, in the same Department until the age of 70 (31<sup>st</sup> October, 2006). Since then acts as Prof. Emeritus at the same university of Debrecen.

Knowledge of languages: Hungarian, English, Italian, German, Russian.

Scientific publications: 276 papers, book chapters or books published, or in press. Number of scientific lectures: about 340

#### Main interest in research:

1. Neurobiology of invertebrate animals: during the first part of the career until 1973.

2. Experimental gerontology. Some studies in this field started already in 1968 when the first study trip of 2 months was realized to the Institute for Experimental Gerontology of F. Verzár at Basel. Experimental gerontology became the principal theme in 1973 when the cooperation with the INRCA in Ancona (Italy) was established. The main problem studied in this field has been the cellular aging, especially the role of cell membrane in the regulation and maintenance of the intracellular physicochemical parameters like water- and dry mass content, ionic strength, etc, in

the postmitotic cells. This concept is actually known as the "membrane hypothesis of aging" (Zs.-Nagy, I.: The Membrane Hypothesis of Aging, 1994, CRC Press, Boca Raton, USA, and numerous other publications).

#### Methodological experience:

1. All kinds of light microscopic techniques including interference, polarization and fluorescence microscopy, cytofluorimetry as well as special techniques like fluorescence recovery after photobleaching (FRAP) methods.

2. Various kinds of electron microscopic methods like classical transmission EM, scanning EM, preparative and quantitative histochemical techniques, etc, including X-ray microanalysis of bulk specimens, sections, etc: application of line-scan ratemeter methods, quantitative morphometry, etc.

3. Various preparative and analytical biochemical and biophysical methods including spectrophotometry, spectrofluorimetry and ESR spectroscopy, with particular regard to the spin trapping techniques for free radicals.

#### University teaching activity

During 1960-63 teaching of anatomy, histology and embryology for medical students. Restart of teaching activity in 1976 in the field of general biology and biophysics with lectures on some special arguments within the DOTE. In 1988 and 1990 at Naples, then in 1991, 1992, 1994 and 1995 in Rome postgraduate courses (20 lectures in each year) on gerontology and geriatrics, in Italian language. Pre- and post-graduate courses of gerontology at Debrecen in Hungarian language, every year since 1994.

#### Study trips to various countries:

Study trips of various lengths were made for scientific collaborations in the following countries (altogether about 14 years): Italy, Japan, USA, The Netherlands, USSR, FRG, Switzerland, Austria, France, Spain, UK, Sweden, Denmark, Canada, East-Germany, Mexico, Finland.

#### International activity:

1. In 1982 founded the journal "ARCHIVES OF GERONTOLOGY AND GERIATRICS", published by Elsevier Biomedical Press, Amsterdam and later by Elsevier, Ireland. Up to the present time, Editor-in-Chief of the same journal.

2. Member of the Board of Directors of the International Association of Biomedical Gerontology (IABG), founded in 1985 in New York. President of the same organization for the years 1993-95.

3. Secretary-Coordinator of the VILEG consisting of an Italian Section (Ancona) and a Hungarian one (Debrecen).

4. 1978-81: Member of the Editorial Board of the journal "Mech. Ageing Dev." (ELSEVIER, Ireland).

5. Organizer of several international meetings:

(i) Budapest, 1986: Verzár Memorial Symposium on Cell Aging: in the frame of Second European Congress of Cell Biology.

(ii) Debrecen, 1987: Lipofuscin - 1987: State of the Art.

(iii) Ancona, 1990: "Verzár Project - 2000".

(iv) Budapest, 1993: 5th IABG Congress.

Scientific qualification at national level:

1. Candidate of the Sciences: 1968, equivalent of PhD degree.
2. Doctor of the Sciences: 1978.  
(In Hungary these were the possible 2 degrees of postgraduate qualification)
3. Guest Professor of the University of Tokyo.
4. Guest Professor of the University of Napoli.

Scientific awards:

1961: "Sub Auspiciis Rei Publicae Popularis" (for the best students taking degree)

1971: Award of the Hungarian Academy of Sciences

1995: Honorary Freeman of the City of Hajdúböszörmény

2002: Monte Carlo Award for Excellence in Anti-Aging Medicine

2002: "Pro Facultate" Award of the Debrecen University

**AN OVERVIEW OF THE ACTUAL RESEARCH TOPICS:**

1. Further studies on the role of cell membrane components in the realization of cell functions during cell differentiation and aging, on various cultured cell lines, in connection with the recent developments of the molecular genetics.

2. Studies on the possibilities of pharmacological interventions to slow down aging through alterations of the cell membrane physicochemistry. Quite recently studies on the role of the recombinant human growth hormone (rhGH) on the cell palasma membrane.

3. Theoretical considerations and experimental studies on the true role of oxygen free radicals in the living system, with particular regard on the role of electron displacements on the macromolecules (semiconduction).

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