

# **CURRICULUM VITAE**

**Joseph Knoll, M.D.**

## **DATE AND PLACE OF BIRTH:**

1925, Kassa, Hungary (now Kosice, Slovakia)

## **OFFICE ADDRESS:**

Semmelweis University, Faculty of General Medicine, Department of Pharmacology and Pharmacotherapy: 1089 Budapest, Nagyvárad tér 4.; 1445 Budapest, POB 370, Hungary, tel/fax: 36-1-210-4405, e-mail: jozsefknoll@hotmail.com

## **EDUCATION:**

Gymnasium, Budapest, 1935-1943, Pázmány Péter University, Faculty of Medicine, Budapest (from 1951 University of Medicine, Budapest, from 1969 Semmelweis University of Medicine, from 1999 Semmelweis University) 1946-1951, M.D. degree in 1951

## **PROFESSIONAL EXPERIENCE:**

In the Dept. of Pharmacology of University of Medicine, Budapest (now Department of Pharmacology and Pharmacotherapy Semmelweis University, Faculty of General Medicine): Teaching Assistant 1949-51; Assistant Professor, 1951-58; Docent, 1958-1962; Acting Head, 1962; Professor of Pharmacology 1963- ; Chairman; 1963-1993; Scientific Adviser, 1993-2004; Professor Emeritus 2004.

## **OFFICES AT UNIVERSITY AND SCIENTIFIC SOCIETIES:**

Vice-President of the University, 1964-70; Vice-President of the Class of Medicine in Hungarian Academy of Sciences, 1967-1976; Committee of Pharmacological Research of the Hungarian Academy of Sciences: Secretary 1958-1962; President: 1962-1995; Hungarian Pharmacological Society: Foundation member, 1962; General Secretary, 1962-1967; President, 1967-1983; Life Honorary President, 1983- ; International Union of Pharmacology (IUPHAR): Member of the International Advisory Board of the 6<sup>th</sup> World Congress of Pharmacology, 1972-1975; Member of the Executive Board as Councillor, 1982-84; as first Vice President 1984-1987

## **HONOURS AT ACADEMIES, UNIVERSITIES AND SCIENTIFIC SOCIETIES:**

Corresponding member of Hungarian Academy of Sciences 1970, Full member; 1979 Member of the German Academy of Sciences (earlier Leopoldina Academy of Natural Sciences), 1974; Honorary doctor of the Medical Academy of Magdeburg, 1984; Honorary doctor of the Bologna University at the occasion of its 900<sup>th</sup> year anniversary, 1989; Honorary Fellow of the Royal Society of Medicine (London), 1990; Foreign member of the Polish Academy of Art and Sciences, 1995; Honorary member of the Pharmacological Societies of Poland, 1980; Czechoslovakia, 1985 and Bulgaria, 1985; Honorary member of the Austrian Parkinson Society, 1986

#### **SIGNIFICANT AWARDS:**

Award of Hungarian Academy of Sciences, 1961, 1964; Semmelweis Prize, 1981; Issekutz Prize, 1982; National Prize of Hungary, 1985; *Festschrift: Neuropharmacology 85'*, Dedicated to Professor Knoll on the occasion of his 60<sup>th</sup> birthday. Eds. Kelemen, K., Magyar, K. & Vizi, E.S., Publishing House of the Hungarian Academy of Sciences, Budapest, 1985, p. 351; Award for Distinguished Service in European Pharmacology, 1999; *Festschrift: Milestones in monoamine oxidase research: discovery of (-)deprenyl*. Dedicated to Professor Knoll on the occasion of his 75<sup>th</sup> birthday. Eds. Magyar, K. & Vizi, E.S., Medicina Publishing House Co., Budapest, 2000; 'Arany János Award' of the Hungarian Academy of Sciences, 2000, Award for Outstanding Contributions to Anti-Ageing Medicine, 2001, Széchenyi Prize (renamed National Prize of Hungary) 2003, Hungarian Award for Achievements in Drug Research 2008, Hungarian Republic's Middlecross Order with the Star 2010.

#### **INVITED PARTICIPATIONS IN SCIENTIFIC CONGRESSES AND SYMPOSIA; HONORARY LECTURES:**

International Symposium on Psychopharmacological Methods, Bologna, 1960; *Plenary lecture* at the Congress of the East German Pharmacologists, Magdeburg, 1960;

2<sup>nd</sup> International Congress of Pharmacology, Prague, 1963;

International Symposium on Psychopharmacology, Magdeburg, 1967;

International Amphetamine Symposium, Milan, 1969;

Special session of the All-Union Sovjet Pharmacological Society, Jerevan, 1970;

*Lecture at the Inauguration Meeting being elected Corresponding Member of the Hungarian Academy of Sciences, Budapest, May 5, 1970;*

*Main lecture at the Learning and Memory Symposium, Magdeburg, 1971;*

*Monoamine Oxidases - New Vistas Symposium, Cagliari (Italy), 1971 (First presentation that (-)deprenyl is a selective inhibitor of MAO-B; the paper of this lecture became a 'Citation classic' in 1982);*

*President and main lecturer of the 1<sup>st</sup> Hungarian Pharmacological Congress with international participation, Budapest, 1971;*

*President and main lecturer of the Sovjet-Hungarian Psychopharmacological Symposium, Leningrad, 1971;*

*President and main lecturer of the Joint Pharmacological Congress of the Czechoslovak and Hungarian Pharmacological Societies, Budapest, 1972;*

*Chairman and speaker of the Symposium on Pharmacology of Learning and Retention at the 5<sup>th</sup> International Congress of Pharmacology, San Francisco, 1972;*

*Invited lecture on azidomorphines at the Drug Dependence Committee Meeting, Chapel Hill, 1973;*

*Chairman and speaker of the Fulton Society Symposium on Learning and Retention, Barcelona, 1973;*

*Lecture at the Drug Dependence Committee Meeting, Mexico City, 1974;*

*Symposium on Psychotropic Drugs at the 26<sup>th</sup> International Congress of Physiology, New Delhi, 1974;*

*CIBA Symposium on Monoamine Oxidases and its Inhibitors, London, 1975 (First presentation of the peculiar therapeutic prospects of (-)deprenyl);*

*Plenary lecture on azidomorfin at the 6<sup>th</sup> International Congress of Pharmacology, Helsinki, 1975;*

*Symposium on Acute Effect of Narcotic Analgetics, Nokkala (Finland), 1975;*

*Plenary lecture on (-)deprenyl at the All-Union Pharmacology Congress, Leningrad, 1976;*

*Introductory lecture on opiate research at the Joint Meeting of the Polish and Hungarian Pharmacological Societies, Zakopane, 1976;*

*1<sup>st</sup> Congress of the Yugoslav Pharmacological Society, Belgrade, 1976;*

*International Symposium on Perspectives in Psychopharmacology, Florence, 1977;*

*2<sup>nd</sup> Hungarian-Polish Symposium on Biogenic Amines, Tihany (Hungary), 1977;*

*6<sup>th</sup> Congress of the Polish Pharmacological Society, Katowice, 1977;*

*Introductory lecture in the Symposium on Pharmacology of Selective MAO-B Inhibitors at the 11<sup>th</sup> Congress of CINP, Vienna, 1978;*

*International Symposium on Enzyme-Activated Irreversible Inhibitors, Strasbourg, 1978;*

Two symposia organized by WHO: '3<sup>rd</sup> Thebain Review Meeting' and 'Review of Psychotropic Substances', Geneva, 1978;

*Introductory lecture* at the 19<sup>th</sup> Congress of East German Pharmacological Society, Magdeburg, 1978;

Symposium on Smooth Muscle Active Peptides and their Receptors, Gotha (Germany), 1979;

*Introductory lecture* on (-)deprenyl at the Symposium on Enzyme Inhibitors as Drugs, London, 1979;

*Plenary lecture* on (-)deprenyl at the 3<sup>rd</sup> Hungarian Congress of Pharmacology with international participation, Budapest, 1979;

*Lecture* in the Cathinon Symposium at the meeting of the Committee of Problems of Drug Dependence (CPDD), Philadelphia, 1979;

Symposium on MAO: Structure, Function and Altered Function, Midland (USA), 1979;

*Plenary lecture* at 2<sup>nd</sup> Congress of the Yugoslav Pharmacological Society, Zadar, 1979;

*Lecture at the Inaguration Meeting being elected Full Member of the Hungarian Academy of Sciences, Budapest, January 17, 1980;*

Symposium on MAO Inhibitors: The State of the Art at the 12<sup>th</sup> Congress of CINP, Göteborg, 1980;

*Chairman and speaker* of the Symposium on Neurotransmitter - Receptor Interactions in Health and Disease at the 3<sup>rd</sup> Congress of the European Society of Neurochemistry, Bled (Jugoslavia), 1980;

International Symposium on Molecular Basis of Drug Action, Queretaro (Mexico), 1980;

*Plenary lecture on satietin at the 8<sup>th</sup> International Congress of Pharmacology, Tokyo, 1981;*

Symposium on Monoamine Oxidase: Basic and Clinical Frontiers, Hakone (Japan), 1981;

*Introductory lecture* on satietin at the 5<sup>th</sup> Joint Symposium of the Polish and Hungarian Pharmacological Societies, Zakopane, 1981;

*Invited lecture on (-)deprenyl, as a strategic drug in aging, at the 2<sup>nd</sup> IUPAC-IUPHAR Strategy in Drug Research Symposium, Noordwijkerhout (Holland)1981 (First proposal to use (-)deprenyl as a prophylactic agent to slow aging of the nigrostriatal dopaminergic machinery in the brain);*

Symposium on Regulatory Peptides: Function and Pharmacological Aspects, Gardone Riviera (Italy), 1981;

Symposium on Monoamine Oxidase and its Selective Inhibitors. Satellite symposium of the International Brain Research Organisation, Mannheim, 1982;

*Semmelweis Memorial Lecture (on satietin), Budapest, 1982;*

*Introductory lecture* in the International Symposium on (-)Deprenyl, Szombathely (Hungary), 1982;

*Plenary lecture* in the All-Union Meeting of the Soviet Pharmacologists, Jerevan, 1982;

*Chairman and speaker* in the Symposium on Regulation of Food Intake at the European Neuroscience Congress, Costa de Sol (Spain), 1982;

*Invited lecture on the history of (-)deprenyl* in the symposium 'A New Approach to the treatment of Parkinson's Disease', Turku (Finland), 1983;

*Issekutz Memorial Lecture (on deprenyl), Budapest, 1983;*

*Introductory lecture* in a (-)Deprenyl Symposium of the English Parkinson Society, London, 1983;

*Plenary lecture on satietins at the 2<sup>nd</sup> International Congress of Clinical Pharmacology, Washington, 1983;*

*Invited lecture on the 'anti-aging' effect of (-)deprenyl* in the 7<sup>th</sup> European Symposium on Basic Research in Gerontology, Budapest, 1983;

Symposium on Psychopharmacology of Food, London, 1983;

*Invited lecture on satietin* in the 1<sup>st</sup> International Symposium on Endocoids, Fort Worth (USA), 1984;

*Chairman and speaker* in the Symposium on Anorectic Agents, at the 9<sup>th</sup> International Congress of Pharmacology, London 1984;

*Invited lecture on pyrido-pyrimidines* in the 1<sup>st</sup> International Conference of Antiinflammatory Drugs, Venice, 1984;

*Introductory lecture* in the symposium Dopamine, Ageing and Disease at the 4<sup>th</sup> Congress of the Hungarian Pharmacological Society, Budapest, 1985;

4<sup>th</sup> Pharmacological Congress of South-East Asia, Penang (Malaysia), 1985;

8<sup>th</sup> International Symposium on Parkinson's Disease, New York, 1985;

*Introductory lecture* on (-)deprenyl at the 9<sup>th</sup> Congress of the Yugoslav Pharmacological Society, Belgrade, 1985;

*Invited lecture on (-)deprenyl* at the 1<sup>st</sup> Congress of the Chinese Pharmacological Society with international participation, Peking, 1986;

Symposium on Dopamine Deficiency Syndrome, Vienna, 1986;

*Honorary Guest lecture* on satietin in the 3<sup>rd</sup> International Symposium of the Molecular Basis of the Action of Drugs, San Francisco, 1987;

*Chairman* of the 'MPTP and Parkinson's Disease' Symposium at the 10<sup>th</sup> International Congress of Pharmacology, Sydney, 1987;

*Introductory lecture in the International Symposium on Deprenyl, Berlin, 1987 (First presentation that (-)deprenyl treatment facilitates the activity of the nigrostriatal dopaminergic neurons by a previously unknown mechanism);*

*Plenary lecture on angiohypotensin in the 6<sup>th</sup> International Catecholamine Symposium, Jerusalem, 1987;*

*Introductory lecture on (-)deprenyl at the 1<sup>st</sup> Joint Meeting of the Italian and Hungarian Pharmacological Societies, Verona, 1988;*

*Symposium on Structure and Function in Neuropharmacology, Warsaw, 1988;*

*Introductory lecture in the Symposium on Neue Erkenntnisse in der Behandlung des Morbus Parkinson, Frankfurt, 1988;*

*Invited lecture at a plenary session of the Bologna University celebrating the 900<sup>th</sup> year of its foundation, Bologna, 1988;*

*9<sup>th</sup> International Symposium on Parkinson's Disease, Jerusalem, 1988;*

*'Lectura magistralis' at the occasion of being honoured 'doctor honoris causa' of the Bologna University, Bologna, March, 20, 1989;*

*Invited lecture on (-)deprenyl in the Symposium on New Strategies in the Treatment of Parkinson's Disease, Copenhagen, 1989;*

*Plenary lecture on satietin in the 11<sup>th</sup> International Medicinal Chemistry Symposium, Jerusalem, 1990;*

*Marabou Symposium on Factors Influencing Food Intake in Man, Sunbyberg (Sweden), 1990;*

*7<sup>th</sup> International Symposium on Control of Bodily Functions, Mainz, 1990;*

*Symposium on Therapy of Parkinson's Disease/an Update, Amsterdam, 1990;*

*European Conference on Parkinson's Disease and Extrapyramidal Disorders, Rome, 1990;*

*Inauguration Meeting at the Royal Society of Medicine being elected 'honorary fellow', London, July 16, 1990;*

*Plenary lecture on (-)deprenyl at the Joint Meeting of the Polish and German Pharmacological Societies, Gdansk, 1992;*

*1<sup>st</sup> International Meeting of the World Hungarian Medical Association (WHMA), Balatonaliga (Hungary), 1992;*

*Symposium on Causes and Modern Treatment of Parkinson's Disease, Copenhagen, 1993;*

*Honorary chairman and introductory lecturer in the Symposium on Past, Present and Future of Parkinson's Disease and invited speaker on the neuroprotective effect of (-)deprenyl at the 15<sup>th</sup> International Congress of Gerontology, Budapest, 1993;*

*Workshop on Dopaminergic Neuroprotection: the State of the Art at the 14<sup>th</sup> Meeting of the International Neurochemical Society, Montpellier, 1993;*

Symposium on Dopaminergic Neuroprotection, Drugs and Neurotrophic Factors: Psychiatric Implications at the 19<sup>th</sup> CINP Meeting, Washington, 1994;  
*Invited lecture* in Alza Symposium, San Francisco, 1995;  
*Invited lecture* in the 3<sup>rd</sup> International Symposium on Neurobiology and Neuroendocrinology of Aging, Bregenz, 1996;  
*Introductory lecture* in the International Conference on Selegiline in Parkinson's Disease, Tokyo, 1996;  
*Invited lecture* in the Satellite Symposium to the 16<sup>th</sup> World Congress of Neurology on 'Biology of dopaminergic neuron: neurotoxicity and neuroprotection in chronic treatments', Punta del Este (Uruguay), 1997;  
*Invited lecture* in the 8<sup>th</sup> Amine Oxidase Workshop, Balatonöszöd, 1998;  
*Honorary President of the Second European Congress of Pharmacology, Budapest, 1999, Honoured with the Award for Distinguished Service in European Pharmacology.*  
*Plenary lecture on (-)deprenyl in the 'Aging- the epidemic of the new millenium' conference, Monte Carlo, 2000,*  
*Chairman and Speaker of the Symposium 'Rationale of anti-aging medication' at the CINP Hungarian Regional Congress, Budapest, Hungary, 2001*  
*Lecture on mesencephalic enhancer regulation. XXIV. CINP Congress, Paris, 2004*  
*Introductory lecture at the 50-year Anniversary Congress of the Hungarian Society of Pharmacology and Experimental Therapeutics, Budapest, Hungary, 2012*

#### **LECTURES BY INVITATION AS INDIVIDUAL SPEAKER:**

Physiological Society, Berlin, 1957; Society of Experimental Medicine, Zagreb, 1965; Lecture tour in USA (10 lectures in San Francisco, Indianapolis, Philadelphia, New York), 1966; University of Liege, 1968; Research Center of Organon, Oss, 1968; University of Parma, 1971; Sovjet Pharmacological Society, Moscow, 1972; Lecture tour in USA ( 8 lectures, New York, Philadelphia, Washington, Chicago), 1972; Karolinska Institut, Stockholm, 1972; Uppsala University, 1972; Lecture tour in Europe (5 lectures, London, Paris, Milan), 1972; Polish Academy of Sciences, Krakow, 1973; Lecture tour in USA and Canada (6 lectures, New York, Syracuse, Washington, Montreal), 1973; Bulgarian Academy of Sciences, Sofia, 1976; Bosnian Academy of Sciences, Sarajevo, 1980; University of Florence, 1980; Stoffwechsel Club, University of Vienna, 1983; Nutrition Foundation of Italy, Milan, 1985; University of Sarajevo, 1985; University of Bologna, 1993; Lecture tour in Brasil (3 lectures, Rio de Janeiro, San Paulo, Salvador), 1994

#### **STUDY-TOURS:**

Sponsored by the Hungarian Academy of Sciences: Visiting for two weeks Prof. Raskova in Prague, 1957; Visiting for one month Prof. Bovet in Rome, 1958; Visiting for six weeks Prof. Anitchkov in St-Peterburg, 1959; Visiting for two weeks Prof. Paton in Oxford, 1960; Sponsored by the World Health Organization: Visiting for three weeks research institutions in Italy, 1970

#### **PARTICIPATION IN CONGRESSES WITH FREE COMMUNICATIONS:**

International Congresses of Pharmacology: 1<sup>st</sup>, Stockholm, 1961; 3<sup>rd</sup>, San Paulo, 1966; 4<sup>th</sup>, Basel, 1969; 7<sup>th</sup>, Paris, 1978; 11<sup>th</sup>, Amsterdam, 1990; 14<sup>th</sup>, Montreal, 1994; International Congresses of Physiology: 22<sup>nd</sup>, Leiden, 1962; 25<sup>th</sup>, Munich, 1971; CIMP Congresses: 1<sup>st</sup>, Rome, 1958; 2<sup>nd</sup>, Basel, 1960; 4<sup>th</sup>, Birmingham, 1964; 7<sup>th</sup>, Prague, 1970; 14<sup>th</sup>, Florence, 1984; European Neuroscience Meetings: 2<sup>nd</sup>, Florence, 1978 (first paper on satitetin); 4<sup>th</sup>, Brighton, 1980; 1<sup>st</sup> CINS Congress, Milan, 1968; 4<sup>th</sup> International Symposium on Catecholamines, Pacific Grove (USA), 1978 (first paper on angiohypotensin)

#### **EDITORIAL BOARDS, EDITORIAL ADVISORY BOARDS:**

**in Hungary:** 'Orvostudomány' (Journal of the Medical Class of the Hungarian Academy of Sciences) 1968-1982 (Editor in Chief); Kísérletes Orvostudomány 1970-1982; Acta Physiologica Hungarica 1967-

**in Foreign Countries:** Pharmacological Research Communication; now Pharmacological Research 1970-1992; Pharmacology, Biochemistry and Behavior 1973-1989; Horizons Biochemistry and Biophysics 1975-1979; European Journal of Pharmacology 1976-1981; Archives internationales de Pharmacodynamie et Thérapie 1977-1995; Journal International Medical Research 1978-1992; Trends in Pharmacological Sciences 1979-1985; Medical Biology 1979 -1989; Excerpta Medica, Pharmacological Section 1988- ; Polish Journal of Pharmacology (now Pharmacological Reports) 1994-

#### **MOST IMPORTANT SCIENTIFIC ACCOMPLISHMENTS:**

1. *Development of a battery of tests* in the 1950s for the pharmacological analysis and rapid screening of tranquilizers, psychostimulants and psychotomimetics.
2. *The realization that the manipulability of behavior appeared with the development of mammalian species capable to fix acquired drives in their cortex.* The rat for example possesses this ability, the mouse is devoid of it. Humans, whose life is based to a great extend on acquired drives developed human society, the most sophisticated form of life on earth, which is still in the trial and error phase of its development. It seeks to outgrow the myth-directed era of its history and come to



its final state, the ration-directed human society. The development of the theory was summarized in two monographs “The Theory of Active Reflexes” 1969 and “The Brain and Its Self”, 2005.

3. *Discovery of the cellulines*, family of specific endogenous cardiotoxic substances.
4. *Development of a new analgesic-antiinflammatory family, the pyrido-(1,2a)-pyrimidines*. Rymazolium (Probon) was registered in 1976.
5. *Development of the azidomorphines*, a new family of opioid analgesics with peculiar pharmacological spectrum.
6. *Discovery of satietins*, an endogenous family of anorectic substances, thought to play the role of a rate limiting satiety signal in the negative feed back of food intake
7. *Discovery of angiohypotensin* an endogenous substance selectively inhibiting the release of noradrenaline from the intramural sympathetic nerves of the resistance vessels
8. *Development of (-)-deprenyl (Selegiline)*. Described in thousands of research papers, (-)-deprenyl is registered in over 60 countries. At present, more than 100 preparations containing selegiline circulate in the global market under different brand names. Eldepryl, Jumex, Movergan, Anipryl, Zelapar, Emsam are the best known ones. They are widely used in the treatment of Parkinson’s disease, Alzheimer’s disease, Major Depressive Disorder and as a geroprotective/anti-aging drug. (-)-Deprenyl (Selegiline), the first selective inhibitor of B-type inhibitor of MAO which, in contrast to the known MAO- inhibitors, did not potentiate the effect of tyramine but inhibited it. The compound could be combined with levodopa in Parkinson’s disease without signs of hypertensive reactions. The DATATOP Study in the USA revealed that (-)-deprenyl delayed the onset of disability associated with early, otherwise untreated Parkinson’s disease. The age-related decay of the supply of the brain with phenylethylamine (PEA), due to the progressive increase of MAO-B activity in the aging-brain, and dopamine, due to the better than average decline of the dopaminergic neuronal activity during the postdevelopmental phase of life are irresistible biochemical lesions of aging. The speed of deterioration of behavioral performances with the passing of time and longevity depends significantly on the pace of the worsening of these lesions. (-)-Deprenyl increasing the supply of the brain with PEA and dopamine, counteracts this aging process. Maintenance of male rats from sexual maturity until death on (-)-deprenyl delays the age-related loss of the capacity to ejaculate, slows the age-related decline of learning ability and prolongs life. In humans, maintenance from sexual maturity on (-)-deprenyl (1 mg daily) is, for the time being, the most promising prophylactic treatment to fight against the age-related

decay of behavioral performances, prolonging life, and preventing or delaying the onset of age-related neurodegenerative diseases such as Parkinson's and Alzheimer's.

9. *Discovery of the enhancer regulation in the brain.* Demonstration that phenylethylamine (PEA) is primarily an endogenous catecholaminergic activity enhancer (CAE) substance and only in high concentration a releaser of catecholamines from their intraneuronal pools. Amphetamine and methamphetamine are synthetic PEA-derived enhancer substances and in higher concentrations releasers of catecholamines. (-)-Deprenyl is the only PEA-derived synthetic CAE substance free of the catecholamine releasing property of its parent compound. The development of R-(-)-1-(benzofuran-2yl)-2-propylaminopentane [(-)-BPAP], a selective and 100 times more potent enhancer substance than (-)-deprenyl, is now the available experimental tool for detection of hitherto unknown enhancer sensitive regulations in the mammalian brain. The state of the art is summarized in a recent monograph, "How Selegiline (-)-Deprenyl Slows Brain Aging", 2012.

## **PUBLICATIONS:**

### *Monographs:*

- (1) The Theory of Active Reflexes. An analysis of some Fundamental Mechanisms of Higher Nervous Activity. Pages 1-131, Publishing House of the Hungarian Academy of Sciences, Budapest, Hafner Publishing Company, New York 1969;
- (2) The Brain and Its Self. A Neurochemical Concept of the Innate and Acquired Drives. Pages 1-176, Springer, Berlin, Heidelberg, New York, 2005;
- (3) in Hungarian: Az agy és tudata. A veleszületett és szerzett hajtóerők neurokémiai koncepciója. Pages 1-266, Publishing House of the Hungarian Academy of Sciences, Budapest, 2006.
- (4) in Hungarian: Az emberiség jövője. A társadalomteremtő agykérgi mechanizmusok elemzésére épített jövőkép. Pages 1-329, Semmelweis Kiadó, Budapest, 2010.
- (5) How Selegiline ((-)-Deprenyl) Slows Brain Aging. Pages 1-161, Bentham Science e-Book Publishers. 2012.

*Handbook of Pharmacology* (in Hungarian), Medicina, Budapest, 1<sup>st</sup> edition 1965, 8<sup>th</sup> edition, 1993; p. 1003;

*Memories of my 45 years in research.* Pharmacol. Toxicol. **75**, 65-72, 1994;

*General Editor* of the Proceedings of the 1<sup>st</sup> Congress of the Hungarian Pharmacological Society, Publishing House of the Hungarian Academy of Sciences, Vol. 1-6, Budapest, 1974; Proceedings of the 2<sup>nd</sup> Congress, Vol. 1-6, Budapest, 1976; Proceedings of the 3<sup>rd</sup> Congress, Vol. 1-6, Budapest, 1979; Proceedings of the 4<sup>th</sup> Congress, Vol. 1-6, Budapest, 1985;

*Number of papers: 876; Number of citations: 7710; Number of patents: 53*

*The most relevant interviews which informed the general reading public of deprenyl research include the following:*

Medical Odyssey. Drug for Ills of the Old Is Drawing Deprenyl Attention after 30-year Struggle. Long Sidetracked, Helps with Parkinson's And Possibly Much More. Trading on Hungary's Jewels. By Michael Waldholz. An interview with Joseph Knoll. The Wall Street Journal. Vol. LXXII. No.31. Tuesday, November 27, 1990;

CBS Sixty Minutes (May, 1993);

David Healy: The Pharmacologists III. Arnold (2000). An interview with Joseph Knoll (Budapest) The Psychopharmacology of Life and Death, pp.81-110;

David J. Brown: Mavericks of Medicine. Conversations on the Frontiers of Medical Research. SmartPublications (2006). An interview with Joseph Knoll. Shattering the Barriers of Maximum Life Span, pp.137-147;

Knoll J interviewed by Ban TA, in *An Oral History of Neuropsychopharmacology - The First Fifty Years: Peer Interviews* (Thomas A. Ban editor), Volume 3 – „Neuropharmacology” (Fridoline Sulser, volume editor). Nashville: American College of Neuropsychopharmacology; 2011. pp. 297-328.

Budapest, January 15, 2014