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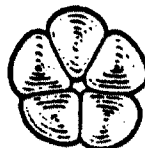


Cellular and Molecular
Basis of
Cholinergic Function

PROGRAMME

Palace Hotel, Buxton
Derbyshire U.K.
May 11th-16th, 1986

107342784



CELLULAR AND MOLECULAR BASIS OF CHOLINERGIC FUNCTION

May 11 - May 14, 1986

The Palace Hotel, Buxton, Derbyshire, U.K.

PROGRAMME COMMITTEE

Michael Dowdall (U.K.)
Sten-Magnus Aquilonius (Sweden) Alexander Karczmar (U.S.A.)
Brian Collier (Canada) Roger Marchbanks (U.K.)
Israel Hanin (U.S.A.) Giancarlo Pepeu (Italy)
Donald Jenden (U.S.A.) Victor Whittaker (F.R.G.)

LOCAL ORGANISERS

Michael Dowdall (Nottingham)
John Hawthorne (Nottingham) Brian Ansell (Birmingham)
Roger Dainty (Nottingham) Allan Prince (London)

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Ellis-Horwood Ltd., Chichester, Sussex, U.K.

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Neurochemistry Stuart Pharmaceuticals (U.S.A.)
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Wine served during evening Poster Sessions by courtesy of
Pergamon Journals and Neurochemistry International.

SYNOPSIS OF PROGRAMME

SUNDAY, MAY 11

12.00 onwards Registration and Poster Assembly

Evening FREE

MONDAY, MAY 12

9.00 Session 1: Structure and Function of Cholinoceptors
Co-chaired by Oliver Dolly and Edward Hulme

14.30 Session 2: Transmembrane Signaling in Cholinergic Cells
Co-chaired by David Colquhoun and Jack Cooper

18.00 Special Lecture by William Feldberg

20.15 Poster 1 (Haddon Room)

Diversity of Cholinoceptors
Functional Coupling to Biochemical and Physiological Events
Co-chaired by Giancarlo Pepeu and Edison Albuquerque

21.15 Discussion of Posters (Chatsworth Room)

TUESDAY, MAY 13

8.45 Session 3: Presynaptic Biochemistry and Cell Biology

Co-chaired by Annica Dahlstrom and Brian Collier
i Molecular Composition and Functional Properties of Synaptic Vesicles
ii Acetylcholine Synthesis and Release

14.30 Poster 2 (Cavendish Room)

Neuropeptides, Growth and Trophic Factors
Synthesis and Storage of Acetylcholine
Control of Acetylcholine Release
Neurotoxins

Co-chaired by Frank McIntosh, Stan Tucek and Abraham Fisher

16.30 Discussion of Posters (Chatsworth Room)

20.00 Special Evening Lecture by Victor Whittaker

WEDNESDAY, MAY 14

9.00 Session 4: Growth and Trophic Factors

Chaired by Victor Whittaker

14.00 Visit to Chatsworth House

19.00 Barbecue

THURSDAY, MAY 15

9.00

Session 5: Cholinotoxins

Co-chaired by Peter Waser and Peter Kass

14.30

Session 6: Disorders of Peripheral Cholinergic
Transmission

Chaired by Edith Hailbrom

19.30

Poster 3 (Peveril Room)

Cholinergic Function and Behaviour
Factors Influencing Cholinergic Function
Co-chaired by Eric Giacobini and G. Brian Ansell

20.30

Discussion of Posters (Chatsworth Room)

FRIDAY, MAY 16

9.00

Session 7: Alzheimer's Disease and Novel
Cholinomimetics

Co-chaired by David Bowen and Donald Jenden

12.00

Overview and Summary of Meeting:

Victor Whittaker

PRESENTATIONS

(These are listed according to the first authors and presenter of each communication. Co-authors are listed in the Abstract Book).

MONDAY MAY 12 A.M.

SESSION 1: STRUCTURE AND FUNCTION OF CHOLINOCEPTORS

Co-chaired by: J. Oliver Dolly, Imperial College, London, U.K.
and
Edward Hulme, NIDDK Mill Hill, London, U.K.

9.00-13.00 with Coffee at 10.30-11.00

Eric Bernard, MRC Molecular Neurobiology Unit, Cambridge, U.K.

"The Structure of the Nicotinic Acetylcholine Receptors from Muscle and from Brain, as Revealed by Gene Cloning Studies".

Edith Kailbronn, University of Stockholm, Sundbyberg, SWEDEN.

"Regulatory Mechanisms at the Peripheral Cholinergic Synapse".

Nigel Birdsall, NIDDK, Mill Hill, London, U.K.

"Muscarinic Receptor Subtypes".

Rudolf Hammer, Boehringer Ingelheim Zentrale GmbH, F.R.G.

"Subclasses of M₂-Muscarinic Receptors".

Mark Wheatley, NIDDK, Mill Hill, London, U.K.

"Purification of the Muscarinic Acetylcholine Receptor from Rat Forebrain".

Tatsuya Naga, Hamamatsu University School of Medicine, Hamamatsu, JAPAN.

"Reconstitution of Muscarinic Cholinoceptors and GTP-Binding Proteins from Porcine Brain".

MONDAY MAY 12 PM

SESSION 2: TRANSMEMBRANE SIGNALING IN CHOLINOCEPTIVE CELLS

Co-chaired by: David Colquhoun, University College, London, U.K.
and
Jack Cooper, Yale University School of Medicine,
New Haven, Connecticut, U.S.A.

14.30-17.30 with Tea at 16.00-16.30

David Ogden, University College, London, U.K.

"Activation of Nicotinic Ion Channels by Acetylcholine Analogues at the Neuromuscular Junction".

Paul Adams, SUNY, Stony Brook, New York, U.S.A.

"Muscarinic Excitation of Vertebrate Neurons".

Stefan Nahorski, University of Leicester, Leicester, U.K.

"Phosphoinositide Metabolism Associated with Muscarinic Receptor Activation in the Brain".

John Newthorne, Medical School, University of Nottingham, U.K.

"Inhibitory Muscarinic Receptors and Phosphoinositide Metabolism".

Donald Jenden, Center for the Health Sciences, University of California,
Los Angeles, California, U.S.A.

"Properties of a New Alkylating Ligand for Muscarinic Receptors".

SPECIAL EARLY EVENING LECTURE 18.00

William Feldberg, National Institute of Medical Research, Mill Hill,
London, U.K.

"Cholinergic 'Activity' in the Thirties: Personal Reminiscences".

MONDAY MAY 12 EVENING

POSTER 1:

Co-chaired by Giuseppe Papeu, University of Florence, ITALY
and
Edson Albuquerque, University of Maryland School of
Medicine, Baltimore, Maryland, U.S.A.

20.15-21.45

DIVERSITY OF CROLINOCEPTORS

Ateed Ahmad, Walter Reed Army Institute of Research, Washington DC, U.S.A.

"A Rapid and Efficient Method for the Assay of Detergent Solubilized
Muscarinic Receptors".

Loris De Conti, Institute De Angeli, Milan, ITALY.

"In Vivo Labelling of Muscarinic Receptors in Peripheral Tissues of
the Rat with ³H-N-Methylscopolamine".

H. Doods, University of Amsterdam, THE NETHERLANDS.

"The Selectivity of Muscarinic Antagonists as Assessed by their
Potency in Radioligand and In Vivo Experiments".

Christer Larsson, Uppsala University, Uppsala, SWEDEN.

"Effects of Chronic Nicotine Treatment of Brain Acetylcholine
Receptors".

Gosta Lundgren, Karolinska Institutet, Stockholm, SWEDEN.

"Binding of L-Hyoscyamine as a Method to Study Muscarinic
Acetylcholine Receptor Density in vivo".

Maurizia Laiteri, University of Genova, Genova, ITALY.

"Functional Approach to the Study of Muscarinic Receptor Subtypes in
the CNS".

Bjorn Ringdahl, School of Medicine, University of California, Los Angeles,
U.S.A.

"Tissue Selectivity of Partial Muscarinic Agonists Related to
Oxotremorine".

William Roeske, University of Arizona, Tucson, Arizona, U.S.A.

"Biochemical, Functional, and Anatomic Evidence for Putative
Muscarinic Receptor Subtypes Using the Selective Antagonists [³H]
AF-DX 116 and [³H] Pirenzepine".

Susan Wonnacott, University of Bath, Bath, U.K.

"Functional Correlates of Brain Nicotine Receptors".

MONDAY MAY 12 EVENING

FUNCTIONAL COUPLING TO BIOCHEMICAL AND PHYSIOLOGICAL EVENTS

Pal Aas Norwegian Defence Research Establishment, Kjeller, NORWAY

"Modulation of the Cholinergic Mechanisms in the Bronchial Smooth Muscle".

Jack Cooper, Yale University School of Medicine, New Haven, Connecticut, U.S.A.

"Substance B: A Factor that Reverses Presynaptic Modulation of ACh Release".

Per-Göran Gillberg, Uppsala University, Uppsala, SWEDEN.

"Cholinergic Binding Sites in Rat Spinal Cord after Spinal Cord Lesions and Rhizotomies".

Jin Guo-zhang, Shanghai Institute of Materia Medica, Shanghai, CHINA.

"Is there any Inter-Innervation between Cholinergic and Noradrenergic Nerve Terminals in Rat Hippocampus?"

Herbert Ladinsky, Istituto De Angeli, Milan, ITALY.

"On the Functional Role of Muscarinic Receptor Subtypes in Rat Striatum and Hippocampus: An In Vivo Study".

Konrad Löffelholz, University of Mainz, F.R.G.

"Effects of Receptor Activation on Choline Phospholipid Metabolism".

Mario Marchi, Institute of Pharmacology and Pharmacognosy, Genova, ITALY.

"Involvement of Cyclic Nucleotides in the Muscarinic Presynaptic Regulation of Acetylcholine and Dopamine Release in the CNS".

Stan Tucek, Institute of Physiology CSAV, Prague, CZECHOSLOVAKIA.

"The Involvement of GTP-Binding Proteins in the Coupling of Cardiac Muscarinic Receptors with Ionic Channels".

Heinz Kilbinger, University of Mainz, Mainz, F.R.G.

"Presynaptic Nicotinic Cholinceptors Mediate Facilitation of Acetylcholine Release from Motor Nerve".

TUESDAY MAY 13 A.M.

SESSION 3: PRESYNAPTIC BIOCHEMISTRY AND CELL BIOLOGY

Co-chaired by: Annica Dahlstrom, Institute of Neurobiology, Goteborg, SWEDEN

and

Brian Collier, McGill University, Montreal, CANADA

8.45-13.00 with Coffee at 10.45-11.15

PART I MOLECULAR COMPOSITION AND FUNCTIONAL PROPERTIES OF SYNAPTIC VESICLES

Herbert Stadler, Max Planck Institute for Biophysical Chemistry, Göttingen, F.R.G.

"The Life Cycle of Cholinergic Vesicles".

Stanley Parsons, University of California, Santa Barbara, California, U.S.A.

"Uptake System for Acetylcholine in Isolated Torpedo Synaptic Vesicles and its Pharmacology".

Herbert Zimmermann, Zoological Institute, University of Frankfurt, F.R.G.

"Cholinergic Synaptic Vesicles Isolated from Motor Nerve Terminals from Electric Fishes to Rat".

Bruno Ceccarelli, Università Degli Studi, Milan, ITALY.

"Changes in Morphology of the Neuromuscular Junction Following Synaptic Activation".

PART II SYNTHESIS AND RELEASE OF ACETYLCHOLINE

Paul Salvaterra, Beckman Research Institute of the City of Hope, Duarte, California, U.S.A.

"Cloning of Drosophila Choline Acetyltransferase cDNA".

Yves Danant, University of Geneva, Switzerland.

"Quantal Acetylcholine Release and its Morphological Counterpart in the Torpedo Electric Organ".

Jan Suskiv, University of Cincinnati School of Medicine, Cincinnati, Ohio, U.S.A.

"Acetylcholine Mobilization: Effects of Vesicular ACh Uptake Blocker, AR3183, on ACh Release at the Frog NMJ, Torpedo Electropiaques, and Rat Brain Synaptosomes".

Maurice Israel, Laboratory of Cellular and Molecular Neurobiology, CNRS, Gif-sur-Yvette, France.

"Isolation and Reconstitution of a Synaptosomal Membrane Protein Translocating Acetylcholine".

TUESDAY MAY 13 PM

POSTER 2

Co-chaired by: Frank McIntosh, McGill University, Montreal, CANADA
Stan Tucek, Institute of Physiology CSAV, Prague,
CZECHOSLOVAKIA

and
Abraham Fisher, Israel Institute for Biological Research,
Mass-Ziona, ISRAEL.

14.30-18.00 with tea at 16.00-16.30

NEUROPEPTIDES, GROWTH AND TROPHIC FACTORS

Dennis Agoston, Max-Planck-Institute for Biophysical Chemistry, Göttingen,
F.R.G.

"Association of a Regulatory Peptide with Cholinergic Neurons".

Edilio Borroni, Max-Planck-Institute for Biophysical Chemistry, Göttingen,
F.R.G.

"An Immunohistochemical Study of Synaptogenesis in the Electric Organ
of Torpedo Using Antisera to Vesicular and Presynaptic Plasma
Membrane Components".

Larry Butcher, Brain Research Institute, University of California, Los
Angeles, California, U.S.A.

"Control of Cholinergic Neuronal Regeneration with Growth Factors".

Brian Collier, McGill University, Montreal, CANADA.

"Presynaptic Effects of Peptides at Cholinergic Synapses: Two
Examples".

A. Claudio Cuello, McGill University, Montreal, CANADA.

"Cortical Damage and Effects of Sialoganglioside GM1 on Forebrain
Cholinergic Neurons".

Ulrike Dohrmann, Max-Planck-Institute for Psychiatry, Martinsried, F.R.G.

"Muscle-Derived Factors that Support Survival and Promote Fiber
Outgrowth from Embryonic Chick Spinal Motor Neurons in Culture".

José Obrocki, Max-Planck-Institute for Biophysical Chemistry, Göttingen,
F.R.G.

"Localisation of Chol-1 in the Central Nervous System of the Rat".

Guillermo Pilar, University of Connecticut, Storrs, Connecticut, U.S.A.

"Differential Opioid Expression in Cholinergic Ciliary Neurons In
Vivo and In Vitro".

TUESDAY MAY 13 PM

Guy Richardson, University of Sussex, Brighton, U.K.

"Developmentally Regulated Neurotrophic Activities of Torpedo
Electric Organ Tissue".

Peter Richardson, University of Cambridge, Cambridge, U.K.

"Adenosine and ATP at the Cholinergic Nerve Terminal".

Anthony Turner, University of Leeds, Leeds, U.K.

"Neuropeptidases Associated with Cholinergic Nerve Terminals".

SYNTHESIS AND STORAGE OF ACETYLCHOLINE

Vera Adam-Vizi, Semmelweis University of Medicine, Budapest, HUNGARY.

"Acetylcholine Release and Calcium Uptake of Synaptosomes as a
Function of Membrane Potential".

Jan Bluzstein, Massachusetts Institute of Technology, Cambridge,
Massachusetts, U.S.A.

"Phosphatidylcholine is a Precursor of Choline for Acetylcholine
Synthesis".

Richard Dahlbom, Uppsala Biomedical Center, Uppsala, SWEDEN.

"Troponium-Like Inhibitors of the High Affinity Uptake of Choline in
Mouse Brain Synaptosomes In Vitro".

Annica Dahlstrom, University of Goteborg, Goteborg, SWEDEN.

"Immunocytochemical Studies on Axonal Transport of 10E3-Antigen- and
Synapsin I Containing Organelles in Motor Axons".

Raffaele Massarelli, Centre de Neurochimie du CNRS, Strasbourg, FRANCE.

"Membrane Bound Choline Acetyltransferase in Rat Brain Synaptosomes".

Rob Polak, Medical Biological Laboratory-TNO, Rijswijk, THE NETHERLANDS.

"Surplus Acetylcholine in the Rat Diaphragm".

Jan Rievy, Institute of Physiology of the Czechoslovak Academy of
Sciences, Prague, CZECHOSLOVAKIA.

"Heterogeneity of Cholinergic Synaptic Vesicles as Revealed by
Combined Effects of AH5183 and Alpha-Latrotoxin".

Gary Rogers, University of California, Santa Barbara, California, U.S.A.

"The Most Interesting Members of the AH5183 Family of Drugs".

TUESDAY MAY 13 PM

CONTROL OF ACETYLCHOLINE RELEASE

Lorenzo Beani, University of Ferrara, ITALY.

"Reversal of Clonidine Effect on Acetylcholine Release During Morphine Tolerance".

Fiorella Cassamenti, University of Florence, Florence, ITALY.

"Effect of D1 and D2 Agonists and Antagonists on Cortical Acetylcholine Release In Vivo".

Silvana Console, Istituto di Ricerche Farmacologiche, "Mario Negri", Milan, ITALY.

"Determination of In Vivo Acetylcholine Release by Trans-Striatal Dialysis Coupled to a Radioenzymatic Assay: Effect of Drugs".

Peter Doukas, Temple University School of Medicine, Philadelphia, PA, U.S.A.

"Suppression of Acetylcholine by Novel Quinuclidine Derivatives: Comparison with Acetylacetylcholinium and N-Hydroxyethyl-Naphthylvinylpyridine".

Robert Manaranche, Laboratoire de Neurobiologie Cellulaire et Moléculaire, CNRS, Gif S/Yvette, FRANCE.

"Ultrastructural Observations on Presynaptic Membrane Proteins".

Daniel Michaelson, Tel Aviv University, Ramat Aviv, ISRAEL.

"Translocation of Cytosolic Acetylcholine into Synaptic Vesicles and Demonstration of Vesicular Release".

Anders Sundvall, Huddinge Hospital, Huddinge, SWEDEN.

"Differences in Biosynthesis, Storage and Release of Choline in Slices and P₂ Fractions from Mouse Brain Cerebral Cortex".

E. Sylvester Vizi, Institute of Experimental Medicine, Hungarian Academy of Sciences, Budapest, HUNGARY.

"Transmitter Release from the Cytoplasm is of Physiological Importance but not Subject to Presynaptic Modulation".

NEUROTOXINS

Edson Albuquerque, University of Maryland School of Medicine, Baltimore, Maryland, U.S.A.

"Multiple Actions of Anticholinesterase Agents on Chemosensitive Synapses".

TUESDAY MAY 13 PM

G. Brian Ansell, University of Birmingham Medical School, Birmingham, U.K.

"The Effect of Lithium and Physostigmine on Levels of Glutamate and Aspartate in Rat Brain".

Cassian Bon, Pasteur Institute, Paris, FRANCE.

"Approach of the Mode of Action of Crotoxin, a Neurotoxic Phospholipase A₂".

Jerry Buccafusco, Medical College of Georgia, Augusta, Georgia, U.S.A.

"Mechanisms of Protection from Cholinesterase Poisoning Afforded by Clonidine and Related Drugs".

E. H. Colhoun, University of Western Ontario, London, Ontario, CANADA.

"In Vivo Actions of Choline Mustard Aziridinium Ion in Rat Brain".

Antonio Contestabile, University of Bologna, ITALY.

"Neurochemical and Anatomical Effects of the Presumptive Cholinergic Toxin, AF64A, in Various Areas of the Goldfish Brain. Comparison with the Effects in Mammalian Brain".

Elisha Heldman, Israel Institute for Biological Research, Ness-Ziona, ISRAEL.

"AF64A-Induced Cholinotoxicity in Rat Brain Synaptosomes and Primary Cell Cultures".

A. Jackie Hunter, Glaxo Group Research, Ware, U.K.

"Lack of Consistent Effects of Ethylcholine Mustard Aziridinium on Choline Uptake In Vivo".

Peter Kasa, Central Research Laboratory, Medical University, Szeged, HUNGARY.

"Morphological Effects of Ethylcholine Mustard Aziridinium Ion on CNS Neurons of Rat and Chick: an In Vivo and In Vitro Study".

William McBride, Foundation 41, Sydney, AUSTRALIA.

"Acetylcholine and Choline Levels in Rabbit Fetuses Exposed to Anticholinergics".

E. Kristina Padder, King's College, London, U.K.

"The Relation of the Choline Carriers and Choline Acetyltransferase in Brain".

George Orsandy, King's College, London, U.K.

"Choline Carrier Activity in Rat Corpus Striatum, Hippocampus and Cortex".

TUESDAY MAY 13 PM

E. Jane Eylert, University of Western Ontario, London, Ontario, CANADA.

"Further Studies on the Actions of Choline Mestard Aziridinium Ion at the Cholinergic Nerve Terminal".

TUESDAY MAY 13 EVENING

SPECIAL EVENING LECTURE 20.00

Victor Whittaker, Max-Planck-Institute for Biophysical Chemistry, Göttingen, F.R.G.

"Cholinergic Transmission - Past Adventures and Future Prospects".

WEDNESDAY MAY 14 AM

SESSION 4: GROWTH AND TROPHIC FACTORS

Chaired by Victor Whittaker, Max-Planck-Institute for Biophysical Chemistry, Göttingen, F.R.G.

9.00-12.00 with coffee at 10.30-11.00

Stanley Appel, Baylor College of Medicine, Houston, Texas, U.S.A.

"Cholinergic Trophic Factors from Skeletal Muscle and Hippocampus".

Peter Waser, Institute of Pharmacology, University of Zurich, SWITZERLAND.

"Cholinergic Neurons in Organotypic Cultures of Brain Tissue".

Hans Thoenen, Max-Planck-Institute for Psychiatry, Martinsried, F.R.G.

"Cholinergic Innervation and Levels of Nerve Growth Factor and its mRNA in the Central Nervous System".

Alfredo Corio, Fidia Research Laboratories, Abano Terme, ITALY.

"Gangliosides in Neuronal Development and Regeneration".

George Koelle, Medical School, University of Pennsylvania, Philadelphia, PA, U.S.A.

"Endogenous and Authentic Neurotrophic Factors for the Maintenance of Cholinesterases in the Preganglionically Denervated Superior Cervical Ganglion of the Cat".

THURSDAY MAY 15 AM

SESSION 5: CHOLINOTOKINS

Co-chaired by Peter Waser, Institute of Pharmacology, University of Zurich, SWITZERLAND

and
Peter Kasa, Medical University, Szeged, HUNGARY.

9.00-13.00 with Coffee at 10.30-11.00

Alexander Karczmar, Loyola University Medical Center, Maywood, Illinois, U.S.A.

"Organophosphorus Compounds and their Effects on Mammalian Ganglionic Transmission".

Martin Johnson, MRC Laboratories, Carshalton, U.K.

"Acetylcholinesterase and Neuropathy Target Esterase (NTE) Compared and Contrasted with the Aid of Organophosphorus Esters".

Michael Adler, US Army Medical Research Institute of Chemical Defense, APG, Maryland, U.S.A.

"Effect of Acetylcholinesterase Inhibitors on Tracheal Smooth Muscle".

Pamela Potter, University of Pittsburgh School of Medicine, Pittsburgh, PA, U.S.A.

"Effect of AF64A-Induced Cholinergic Deficit on Brain Serotonergic and Catecholaminergic Systems: Further Studies on a Potential Animal Model of Alzheimer's Disease".

J. Oliver Dolly, Imperial College, London, U.K.

"Botulinum Neurotoxins: Target Sites and Mode of Action".

Peter Strong, University College London, London, U.K.

"Presynaptic Phospholipase A₂ Neurotoxins".

THURSDAY MAY 15 PM

SESSION 6: PERIPHERAL CHOLINERGIC DISORDERS

Angela Vincent, Royal Free Hospital School of Medicine, London, U.K.

"Autoimmune and Congenital Disorders Affecting Postsynaptic Membranes at the Neuromuscular Junction".

Sten-Magnus Aquilonius, Uppsala University, Uppsala, SWEDEN.

"Neuropharmacology of Motor Neuron Disease".

John Newson-Davis, Royal Free Hospital School of Medicine, London, U.K.

"Presynaptic Myasthenia".

Dean Smith, University of Wisconsin, Madison, Wisconsin, U.S.A.

"Acetylcholine Metabolism and Choline Availability at the Neuromuscular Junction of Mature Adult and Aged Rats".

Dennis Wray, Royal Free Hospital Medical School, London, U.K.

"Electrophysiological Studies on the Site of Action of Myasthenic Syndrome Antibodies".

THURSDAY MAY 15 EVENING

POSTER 3:

Co-chaired by **Ezio Giacobini, Southern Illinois University, School of
Medicine, Springfield, Illinois, U.S.A.**
and
**G. Brian Ansell, University of Birmingham Medical
School, Birmingham, U.K.**

19.30-21.15

CHOLINERGIC FUNCTION AND BEHAVIOUR

Thomas Arendt, Paul Flechsig Institute of Brain Research, Karl Marx
University, Leipzig, GDR.

"Alzheimer's Disease: Increase in Dendritic Branching of Reticular
Neurons in the Basal Nucleus - a sign of Regeneration?"

Abdu Adem, University of Uppsala, SWEDEN.

"Can Extraneural Cholinergic Markers Aid in the Diagnosis of
Different Forms of Dementia?"

Peter Chiang, Walter Reed Army Institute of Research, Washington, DC,
U.S.A.

"Comparison of In Vitro Antimuscarinic Potencies with their
Behavioural Effects".

Frans Flentge, University Psychiatric Clinic, Groningen, THE NETHERLANDS.

"Lithium Treatment and Red Cell Choline - An Animal Model which
Parallels Responses seen with Manic-Depressive Patients".

Richard Jope, University of Alabama, Birmingham, Alabama, U.S.A.

"Cholinergic Metabolism and Pharmacological Characterization of
Status Epilepticus Induced by Lithium and Pilocarpine".

John Leu, Walter Reed Army Institute of Research, Washington, DC, U.S.A.

"Effects of Cholinergic Agonists and Antagonists on Memory in
Rodents".

Lena Nilsson, University of Uppsala, Uppsala, SWEDEN.

"A Comparative Study on ³H-Acetylcholine Release from Control and
Alzheimer Cortical Slices: Increasing Effect of Physostigmine on
Alzheimer Brains".

Agneta Nordberg, University of Uppsala, SWEDEN.

"A Marked Reduction in the Number of Nicotinic Receptors in the
Frontal Cortex of Alzheimer Brains".

THURSDAY MAY 15 EVENING

Ingrid Nordgren, Karolinska Institutet, Stockholm, SWEDEN.

"Diazepam and Cholinergic Mechanisms in Mouse Brain. Effects on Acetylcholine Turnover and Oxotremorine Induced Tremor and Hypothermia".

Sven Ogren, Astra Lakemedel AB, Sodertalje, SWEDEN.

"Studies on the Role of Serotonin in the Potentiation of Muscarinic Evoked Responses by Alaproclate".

Pasvo Riekkinen, University of Kuopio, Kuopio, FINLAND.

"The Cholinergic Approach from CSF to Alzheimer Brain".

John Salmons, Marck Sharp & Dohme Neuroscience Research Centre, Harlow, U.K.

"Nucleus Basalis Lesions and Anticholinergic Drugs Impair Spatial Memory and Visual Discrimination Performance in the Rat".

Giacomo Spignoli, University of Florence, Florence, ITALY.

"Effect of Oxiracetam on Electroshock-Induced Amnesia and Brain Acetylcholine Levels".

James Unay, Institute of Psychiatry, London, U.K.

"Inhibition of Choline Transport in Human Brain by Lithium".

FACTORS INFLUENCING CHOLINERGIC FUNCTION

Alberto Alabanese, Istituto Neurologia, Universita Cattolica, Rome, ITALY.

"Morphometric Study of Cholinergic Neurons in Inbred Strains of Mice: Genetically Determined Early Loss of Forebrain Cholinergic Neurons as a Model of Central Nervous System Cholinergic Failure".

Mohamed Fahin, University of Southern California, Los Angeles, California, U.S.A.

"Aging in the Mammalian Neuromuscular Junction".

Gary Gibson, Burke Rehabilitation Center, White Plains, New York, U.S.A.

"Nerve Ending Acetylcholine Metabolism and Calcium Homeostasis During Hypoxia".

Lisa Giovannelli, University of Florence, Florence, ITALY.

"Effect of Phosphatidylserine on Acetylcholine Release and Calcium Uptake in Aged Rats".

Rajesh Kalaria, Case Western Reserve University School of Medicine, Cleveland, Ohio, U.S.A.

"Choline Transport in Cerebral Microvessels".

THURSDAY MAY 15 EVENING

Peter Molenaar, University of Leiden, THE NETHERLANDS.

"The Metabolism of Acetylcholine in the Lambert-Eaton Myasthenic Syndrome".

Norman Robbins, Case Western Reserve University, Cleveland, Ohio, U.S.A.

"Enhanced Transmitter Release as an Age Change of Certain Mouse Neuromuscular Junctions".

Lynn Wecker, Louisiana State University Medical Center, New Orleans, LA, U.S.A.

"Central Nervous System Effects of Choline Supplementation".

Steven Zeisel, Boston University School of Medicine, Boston, Massachusetts, U.S.A.

"Choline Availability in the Neonate".

FRIDAY MAY 16 AM

SESSION 7: ALZHEIMER'S DISEASE AND NOVEL CHOLINOMIMETICS

Co-chaired by: David Bowen, Institute of Neurology, London, U.K.
and
Donald Jenden, Centre for the Health Sciences,
University of California, Los Angeles, California,
U.S.A.

9.00-12.00 with coffee at 10.30-11.00

Neil Sims, Burke Rehabilitation Center, White Plains, New York, U.S.A.

"Neurochemical Studies of Early Onset Alzheimer's Disease".

Esio Giacobini, Southern Illinois University School of Medicine,
Springfield, IL, U.S.A.

"Models of Cholinergic Therapy of Alzheimer's Disease".

Abraham Fisher, Israel Institute for Biological Research, Ness-Ziona,
ISRAEL.

"Restoration of Cholinergic and Cognitive Functions in an Animal
Model of Alzheimer's Disease Using Various Cholinergic
Manipulations".

Tomas Bartfai, University of Stockholm, SWEDEN.

"Actions of Alaproclate, a Novel Procholinergic Drug, and its
Potential Therapeutic Value in Alzheimer's Disease".

Giancarlo Pepeu, University of Florence, Florence, ITALY.

"Aging Brain: Investigations on Potentially Useful Drugs Acting on
Cholinergic Mechanisms".

